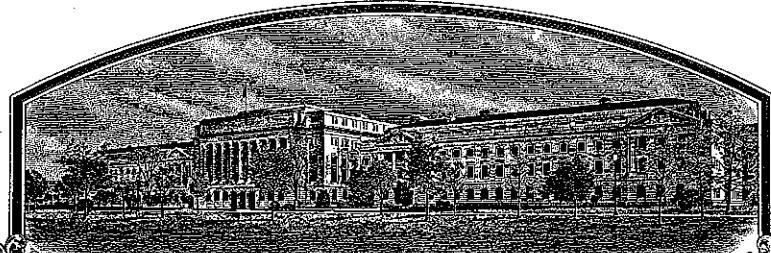


No.

200100241



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Ag Biotech of Oregon, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HERETO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE EXCLUSIVE RIGHT AND PRIVILEGE TO THE APPLICANT(S) TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR SELLING IT, OR OFFERING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE PURPOSES STATED, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED IN THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

RYEGRASS, PERENNIAL

'Dandy II'

In Testimony Whereof, I have hereunto set my hand
and caused the seal of the Plant Variety
Protection Office to be affixed at the City of
Washington, D.C. this twenty-third day of June,
in the year two thousand and five.

Attest:

Commissioner

Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE**

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1980.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER Ag Biotech of Oregon, Inc.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME PR97DII	3. VARIETY NAME Dandy II
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 1125 S.W. Stopp Place Corvallis, Oregon 97333		5. TELEPHONE (Include area code) (541) 753-4144	6. FOR OFFICIAL USE ONLY PVPO NUMBER 200100241
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Corporation		8. IF INCORPORATED, GIVE STATE OF INCORPORATION Oregon	9. DATE OF INCORPORATION 1988
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) John R. Hardison Ag Biotech of Oregon, Inc. 1125 SW Stopp Place Corvallis, OR 97333			
FILING AND EXAMINATION FEES: FEES \$ 2450 + 255 RECEIVED DATE 8/3/01 8/3/01 CERTIFICATION FEE: FEES \$ 432.00 RECEIVED DATE 5-23-2005			
11. TELEPHONE (Include area code) (541) 753-4144	12. FAX (Include area code)	13. E_MAIL	14. CROP KIND (Common Name) Perennial Ryegrass
15. GENUS AND SPECIES NAME OF CROP Lolium perenne		16. FAMILY NAME (Botanical) Poaceae	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)		19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act <input type="checkbox"/> YES (if "yes", answer items 20 and 21 below) <input checked="" type="checkbox"/> NO (if "no," go to item 22)	
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Options) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <i>(BT: 5/24/2005 per applicant's authorization to omit the "Yes" answer submit the "No" answer)</i>	
		21. IF "YES" TO ITEM 20, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? for item no. 20 and the F.R.C. option <input checked="" type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED BT: 5/24/2005 BT: 5/24/2005 BT: 5/24/2005	
22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
IF YES, PLEASE PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)			

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER  NAME (Please print or type) John R. Hardison	SIGNATURE OF OWNER NAME (Please print or type)		
CAPACITY OR TITLE President	DATE 7-30-01	CAPACITY OR TITLE	DATE

18a. Exhibit A. Origin and Breeding History of the Variety

Development of Dandy II perennial ryegrass involved testing of varietal material, hybridization of selected plants, and recurrent phenotypic evaluation and selection of parental individuals during several cycles. Germplasm from several parental lines was utilized including plants from three cultivars. From each parental line seeds were planted in potting soil held in individual compartments in plastic trays or in peat balls. The resulting plants were inoculated by spraying leaves with urediniospores of crown rust, *Puccinia coronata* Corda. in an aqueous suspension containing a surfactant to aid leaf wetting. Severely infected plants with abundantly sporulating pustules were discarded. Plants with resistant type lesions or with no apparent infection were transplanted to a spaced plant nursery. Germplasm was utilized from 51 parent lines by intercrossing 18 plants selected from Elf, 28 from Dandy, and 5 from Devine. Resulting progeny plants were tested for resistance by natural and artificial inoculation with urediniospores of stem rust, *P. graminis* Pers. Severely infected plants were destroyed. Surviving plants were intercrossed. Progeny plants were tested by natural and artificial inoculation for resistance to crown and stem rusts, and by natural inoculation for resistance to powdery mildew, *Erysiphe graminis* DC., scald, *Rhynchosporium orthosporum* Caldwell and *R. secalis* (Oud.) J.J. Davis, as well as net blotch, *Drechslera dictyoides* (Drechs.) Shoemaker and brown blight, *D. siccans* (Drechs.) Schoemaker. During each cycle plants were also selected for uniformity, turf type, seed yield, dark color, and freedom from other diseases such as yellow dwarf virus and red thread, *Laetisaria fuciformis* (McAlpine) Burdsall (former name *Corticium fuciforme* (Berk.) Wakef. Thirty one plants were selected at this stage and intercrossed to produce breeder seed.

Dandy II perennial ryegrass is a stable and uniform variety.

PR97DII is the experimental designation of Dandy II.

Dr. John R. Hardison is the designated breeder of the variety.

Breeder seed was first produced in 1997.

Dandy II was observed in Breeder and Foundation generations and observed to be uniform and stable. No variants have been observed in subsequent seed increases.

18b.

EXHIBIT B STATEMENT OF DISTINCTNESS

Dandy II perennial ryegrass can be distinguished from other cultivars by a combination of characters summarized in Tables 1 to 23.

Dandy II perennial ryegrass differs from Manhattan perennial ryegrass based on 2 year measurements as follows:

Table Characteristic

		Dandy II	vs	Manhattan
	Flag leaf length cm			
7A	OR1998 LSD .05 1.5	8.2		15.2
7B	OR1999 LSD .05 3.03	10.8		15.87
	Spikelets Spikelets per spike			
11A	OR1998 LSD .05 2.1	20.25		25.07
11B	OR1999 LSD .05 2.3	16.89		22.33
	Spike length cm			
13A	OR1998 LSD .05 1.7	16.9		21.6
13B	OR1999 LSD .05 2.9	16.0		18.4

REPRODUCE LOCALLY. Include form number and date on all reproductions.

Form Approved - OMB No. 0581-005

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is (0581-0055). The time required to complete this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY PROGRAM
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705**

EXHIBIT C
(RYEGRASS)

**OBJECTIVE DESCRIPTION OF VARIETY
RYEGRASS
(*Lolium spp.*)**

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Ag Biotech of Oregon, Inc.	PR97DII	Dandy II
ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)	FOR OFFICIAL USE ONLY	
1125 S.W. Stopp P1. Corvallis, Oregon 97333	PVPO NUMBER d00100241	

Place the appropriate number that describes the varietal characteristics of this variety in the boxes below. Use leading zeroes when necessary (e.g. 089). Descriptions of characters should represent those that are typical for the variety. Ranges may be given also. Measured data should be for SPACED PLANTS. Give additional description for all characteristics that cannot be adequately described in the form below. Append a pertinent comparative trial and evaluation data. The symbol " " indicates decimal.

1. SPECIES:

1 = *L. multiflorum* (annual or italian:
includes Westerwoldicum) 2 = *L. perenne* (perennial) 3 = *L. rigidum* (includes Wimmeria)

4 = Hybrid (of species): _____ 5 = Other (Please specify): _____

2. PLOIDY:

1 = Diploid 2 = Tetraploid 3 = Other (Please specify): _____

3. DURATION:

1 = Annual or Biennial 2 = Short lived perennial (3-4 years) 3 = Perennial (more than 4 years)

STANDARD CULTIVARS

1 = GULF	2 = WIMMERIA 62	3 = LINN	4 = PELO
5 = NORLEA	6 = ABERYSTWYTH S-23	7 = MANHATTAN	8 = PENNFINE

4. MATURITY (50% HEADED) Use standards from above for comparison:

1 = Very Early	3 = Early	<input type="checkbox"/> 5 DAYS EARLIER THAN ...	<input type="checkbox"/> 7 STANDARD CULTIVAR
5 = Medium	7 = Late	<input type="checkbox"/> 4 DAYS LATER THAN ...	<input type="checkbox"/> 8 STANDARD CULTIVAR

5. MATURE PLANT HEIGHT (Use standard cultivars from above):

7.28 2/17/95 52.8	cm High	<input type="checkbox"/> 3 cm Shorter than.....	<input type="checkbox"/> 7 STANDARD CULTIVAR
		<input type="checkbox"/> 4 cm Taller than.....	<input type="checkbox"/> 8 STANDARD CULTIVAR

6. PERCENT WINTER DAMAGE (estimated as percent of the area appearing dead. Use standard cultivars from above for comparison):

Percent Damage of Application Cultivar

Percent Damage of STANDARD CULTIVAR

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7. TURF DENSITY (Use standard cultivars from above):

Tillers per 100 square cm

Less tillers per 100 square cm than ... STANDARD CULTIVAR

More tillers per 100 square cm than ... STANDARD CULTIVAR

8. FLAG LEAF (at full growth, use standard cultivars from above):

8 2 cm Length (from ligule to tip) 2 4 7 mm Width (at widest point)

7 0 cm Shorter than 7 STANDARD CULTIVAR 5 Flag Leaf at Boot Stage

0 3 cm Longer than 8 STANDARD CULTIVAR

1 4 mm Narrower than 7 STANDARD CULTIVAR

mm Wider than STANDARD CULTIVAR

1 = Deflexed
3 = Recurved
5 = Horizontal
7 = Semi-Erect
9 = Erect

9. LEAVES:

3 VERNATION: 1 = Leaves rolled in young shoots
3 = Leaves folded in young shoots 2 = Leaves semi-rolled (folded with rolled edges)

8 % Plants with anthocyanin in lower leaf sheath (Cotyledon) Table 18B1 1999 Data 2 + Foliage Color: 1 = Yellow Green
Dark green 2 = Medium Green
3 = Blue Green

10. SPIKE:

1 6 9 mm Spike length (tip to internode below lowest floret)

4 7 mm Shorter than STANDARD CULTIVAR

3 5 mm Longer than 8 STANDARD CULTIVAR

1 6 1 3 mg per ten spikes (trimmed to internode below lowest floret) 1000 seed

9 8 mg lighter per ten spikes than 8 STANDARD CULTIVAR

5 1 3 mg heavier per ten spikes than 7 STANDARD CULTIVAR

1 0 florets per spikelet

PERCENTAGE OF PLANTS WITH:

Rachis: 1 8 % Smooth 8 2 % Rough

Spike Color: 3 8 % Green 6 2 % Purple

Lemma: % Awned

mm Awn length 7 6 mm Glume length

10. SPIKE (Continued)

Dandy II

- 1 = Spikelet length nearly equal to outer glumes
 2 = Spikelet length much longer than outer glumes

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11. COLEOPTILE:

8 % Plants with anthocyanin in coleoptile Table 18B1 1999 data

12. ANTHER COLOR:

2 7 % Plants with white anthers 6 3 % Plants with yellow anthers

1 0 % Plants with purple anthers

13. ROOT AND PLANT CHARACTERS:

2 6 % Plants with prostrate growth habit

 % Plants with florescent roots

7 4 % Plants with upright growth habit

14. SEED:

1 6 1 3 mg per 1000 seeds 5 8 9 mm Total Length of 10 seeds 1 2 3 mm Total Width of 10 seeds

15. DISEASE (0 = Not Tested, 2 = Highly Susceptible, 4 = Moderately Susceptible, 6 = Moderately Resistant, 8 = Highly Resistant)

- | | | | |
|-------------------------------------|---|--------------------------|---------------------------------------|
| <input type="checkbox"/> | Crown Rust (<i>Puccinia coronata</i>) | <input type="checkbox"/> | Dollar Spot (<i>Sclerotinia</i>) |
| <input type="checkbox"/> | Brown Patch (<i>Rhizoctonia</i>) | <input type="checkbox"/> | Leaf Spot (<i>Helminthosporium</i>) |
| <input type="checkbox"/> | Mildew | <input type="checkbox"/> | Snow Mold (<i>Typhula</i>) |
| <input checked="" type="checkbox"/> | Red Thread (<i>Corticium</i>) | <input type="checkbox"/> | Other (Please Specify): _____ |

16. INSECT (0 = Not Tested, 2 = Highly Susceptible, 4 = Moderately Susceptible, 6 = Moderately Resistant, 8 = Highly Resistant)

Please Specify: _____

17. Give resemblance value in left column and variety code number in right column for variety with which comparison is made
 (1 = less than, 2 = same as, 3 = more erect, more resistant, denser, more persistent, darker or greater height.):

Resemblance	Character		Similar Variety
<input type="checkbox"/> 2	Plant Habit (erectness)	<input type="checkbox"/> 3	1 = GULF
<input type="checkbox"/>	Tillering	<input type="checkbox"/>	2 = WIMMERIA 62
<input type="checkbox"/>	Winter hardiness	<input type="checkbox"/>	3 = LINN
<input type="checkbox"/>	High Temperature Stress Resistance	<input type="checkbox"/>	4 = PELO
<input type="checkbox"/>	Turf Persistence	<input type="checkbox"/>	5 = NORLEA
<input type="checkbox"/> 3	Plant Color	<input type="checkbox"/> 7	6 = ABERYSTWYTH S-23
<input type="checkbox"/>	Vertical Seeding Growth Rate	<input type="checkbox"/>	7 = MANHATTAN
<input type="checkbox"/>	Crown Density	<input type="checkbox"/>	8 = PENNFINE
<input type="checkbox"/>	Mower Shredding Resistance	<input type="checkbox"/>	

Dandy II

18. GIVE AREA OF ADAPTATION AND INTENDED USE: Cool season regions worldwide 20010024

19. GIVE AREA TEST RESULTS PRESENTED FROM: Oregon

20. COMMENTS:

EXHIBIT D Additional description of Variety

Botanical measurements that were made on plants of Dandy II and other perennial ryegrass cultivars in spaced plant nurseries in 1998 are summarized in Tables 1A through 21A. Measurements made in 1999 are summarized in Tables 1B through 23B.

The 1998 data were used in preparation of Exhibit C unless indicated as 1999 data. Averages from 1998 and 1999 data were used in preparation of Exhibit B, Statement of Distinctness.

Copies of the 1998 and 1999 groups of tables, preceded by a page listing the subject titles for each year to aid in locating the subject data, are included as part of Exhibit D in support of the application.

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List of tables containing measurements of morphological and other characteristics of perennial ryegrass cultivars obtained during 1998 on plants that had been transplanted in November 1997 in spaced plant plots near Corvallis, Oregon

Table 1A Heading date in 1998

Table 2A Mature growth habit, prostrate vs upright, 1998

Table 3A Winter color, 1998

Table 4A Percent rough vs smooth rachis, 1998

Table 5A Flag leaf height (cm) 1998

Table 6A Flag leaf width (mm) 1998

Table 7A Flag leaf length (cm) 1998

Table 8A Length of spikelet (mm) 1998

Table 9A Outer glume length (mm) 1998

Table 10A Number of florets/spikelet 1998

Table 11A Number of spikelets/spike 1998

Table 12A Plant height in winter (cm) 1998

Table 13A Length of spike (cm) 1998

Table 14A Length of flag leaf sheath (cm) 1998

Table 15A Color of spike 1998

Table 16A Width of seed (mm) 1998

Table 17A Length of seed (mm)

Table 19A Weight of 1000 seed 1998

Table 20A Flag leaf posture at boot stage 1998

Table 21A Anther date (Julian) 1998

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Table 1A. Heading date in 1998 of perennial ryegrass cv Dandy II
 (Code Names PR 97 DII) compared to other cultivars transplanted
 November 1997 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP
 Case Range 139-184, Variable 6: HEADING DATE (JULIAN)
 Randomized complete block design, 3 replications, ANOVA-LSD mean separation
 Observations to calculate mean = 3, Least Significant Difference Test
 Error mean square = 3.344 Error degrees of freedom = 90
 LSD value = 2.966 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 146.4	KLMN	Mean 16 = 157.6 A		
Mean	2 = 151.3 CDEF		Mean 20 = 154.3 B		
Mean	3 = 149.9 CDEFGHIJ		Mean 17 = 152.4 BC		
Mean	4 = 151.4 BCDE	O	Mean 25 = 152.4 BCD		
Mean	5 = 143.2 JKLMN		Mean 36 = 151.4 BCDE		
Mean	6 = 147.2 FGHJKL		Mean 22 = 151.4 BCDE		
Mean	7 = 148.4 EFGHIJK		Mean 4 = 151.4 BCDE		BRIGHTSTAR
Mean	8 = 148.6 EFGHIJK		Mean 2 = 151.3 CDEF		ADVANTAGE
Mean	9 = 150.3 CDEFGHI		Mean 34 = 151.3 CD&FG		SUNBRIGHT
Mean	10 = 148.3 GHJKL		Mean 19 = 151.1 CDEFGH		MAGIC = June 1
Mean	11 = 150.4 CDEFGHI		Mean 11 = 150.4 CDEFGHI		ELF = May 30
Mean	12 = 150.1 CDEFGHIJ		Mean 9 = 150.3 CDEFGHI		DERBY SUP
"	13 = 148.5 EPGHIJK		Mean 12 = 150.1 CDEFGHIJ		
Mean	14 = 147.2 JKLMN	P	Mean 41 = 150.0 CDEFGHIJ		TARGET = May 30
Mean	15 = 137.2		Mean 31 = 149.9 CDEFGHIJ		LP 0-93
Mean	16 = 157.6 A		Mean 3 = 149.9 CDEFGHIJ		BLAZER III
Mean	17 = 152.4 BC		Mean 28 = 149.8 CDEFGHIJ		PRELUDE II
Mean	18 = 145.5 LMNO		Mean 23 = 149.8 CDEFGHIJ		MORN STAR
Mean	19 = 151.1 CDEFGH		Mean 27 = 149.6 CDEFGHIJ		PINNACLE
Mean	20 = 154.3 B		Mean 29 = 149.6 CDEFGHIJ		RACER
Mean	21 = 148.9 EFGHIJK		Mean 33 = 149.6 CDEFGHIJ		LP BB-93
Mean	22 = 151.4 BCDE		Mean 24 = 149.6 CDEFGHIJ		PALMER II
Mean	23 = 149.8 CDEFGHIJ		Mean 37 = 149.4 D&SPGHIJ		EV II
Mean	24 = 149.6 CDEFGHIJ		Mean 40 = 149.3 EPGHIJK		SUNSHINE
Mean	25 = 152.4 BCD	MNO	Mean 38 = 149.1 EPGHIJK		SATURN
Mean	26 = 145.1		Mean 35 = 149.0 EPGHIJK		PR 97 DII = Dandy II = 5/29
Mean	27 = 149.6 CDEFGHIJ		Mean 21 = 148.9 EPGHIJK		MAN II
Mean	28 = 149.8 CDEFGHIJ		Mean 46 = 148.9 EPGHIJK		TPR 96 P
Mean	29 = 149.6 CDEFGHIJ	NO	Mean 8 = 148.6 EPGHIJK		DEL DNP
Mean	30 = 144.9		Mean 13 = 143.5 EPGHIJK		HEADSTART
Mean	31 = 149.9 CDEFGHIJ		Mean 42 = 148.4 PGHIJKL		CUTTER
Mean	32 = 148.0 IJKLN		Mean 7 = 148.4 PGHIJKL		EDGE
Mean	33 = 149.6 CDEFGHIJ		Mean 10 = 148.3 GHJKL		TPR 96 A
Mean	34 = 151.3 CDEFG		Mean 43 = 148.2 HIJKL		TPR 96 C
Mean	35 = 149.0 EPGHIJK		Mean 45 = 148.1 IJKL		TPR 96 B
Mean	36 = 151.4 BCDE		Mean 44 = 148.1 IJKLN		SHERWOOD
Mean	37 = 149.4 DEFGHIJ		Mean 39 = 148.0 IJKLN		LP Q-93
"	38 = 149.1 EPGHIJK		Mean 32 = 148.0 IJKLN		JIFFIE
Mean	39 = 148.0 IJKLN		Mean 14 = 147.2 JKLNN		CIT II
Mean	40 = 149.3 EPGHIJK		Mean 6 = 147.2 JKLNN		ACHIEVER
Mean	41 = 150.0 CDEFGHIJ		Mean 1 = 146.4 KLNN		LYNX
Mean	42 = 148.4 FGHIJKL		Mean 18 = 145.5 LNNO		PENNIPINE = May 25
Mean	43 = 148.2 HIJKL		Mean 26 = 145.1 LNNO		
Mean	44 = 148.1 IJKLN		Mean 30 = 144.9 NO		
Mean	45 = 148.1 IJKL		Mean 5 = 143.2 O		CALYPSO II
Mean	46 = 148.9 EPGHIJK		Mean 15 = 137.2 P		LINN = May 17

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Table 2A. Mature growth habit in 1998 of perennial ryegrass cv Dandy II
 (Code names PR 97 DII) compared with other cultivars trans-
 planted November 1997 to spaced plant plots near Corvallis, Oregon.

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP
 Case Range: 139-184, Variable 19: MATURE GROWTH HABIT 1=PROSTRATE 9=UPRIGHT
 Randomized complete block design, 3 replications, ANOVA-LSD mean separation
 Observations to calculate mean = 3 Least significant difference test
 Error mean square = 1.1773 Error degrees of freedom = 90
 LSD value = 2.160 at alpha = 0.050

	Original Order		Ranked Order	LINe
Mean	1 = 6.667 ABCD		Mean 22 = 7.667 A	
Mean	2 = 7.333 AB		Mean 2 = 7.333 AB	ADVANTAGE
Mean	3 = 6.333 ABCD		Mean 14 = 7.333 AB	JIFFIE
Mean	4 = 6.333 ABCD		Mean 13 = 7.333 AB	HEADSTART
Mean	5 = 6.667 ABCD		Mean 7 = 7.333 AB	CUTTER
Mean	6 = 7.000 ABC		Mean 25 = 7.000 ABC	PANTHER
Mean	7 = 7.333 AB		Mean 33 = 7.000 ABC	LP BB-93
Mean	8 = 6.333 ABCD		Mean 23 = 7.000 ABC	MORN. STAR
Mean	9 = 5.333 BCD		Mean 6 = 7.000 ABC	CIT II
Mean	10 = 5.333 BCD		Mean 34 = 7.000 ABC	SUNBRIGHT
Mean	11 = 6.000 ABCD		Mean 15 = 6.667 ABCD	LINN
Mean	12 = 6.333 ABCD		Mean 5 = 6.667 ABCD	CALYPSO II
Mean	13 = 7.333 AB		Mean 19 = 6.667 ABCD	MAGIC
"	14 = 7.333 AB		Mean 32 = 6.667 ABCD	LP Q-93
Mean	15 = 6.667 ABCD		Mean 36 = 6.667 ABCD	PR 97 EL2
Mean	16 = 3.000 E		Mean 38 = 6.667 ABCD	SATURN
Mean	17 = 5.667 ABCD		Mean 1 = 6.667 ABCD	ACHIEVER
Mean	18 = 6.000 ABCD		Mean 41 = 6.667 ABCD	TARGET
Mean	19 = 6.667 ABCD		Mean 30 = 6.667 ABCD	SUNSHINE
Mean	20 = 6.000 ABCD		Mean 40 = 6.667 ABCD	MAN II
Mean	21 = 6.667 ABCD		Mean 21 = 6.667 ABCD	PALMER II
Mean	22 = 7.667 A		Mean 24 = 6.667 ABCD	PR 97 DII = Dandy II - 74% Upright
Mean	23 = 7.000 ABC		Mean 35 = 6.667 ABCD	26% Prostrate
Mean	24 = 6.667 ABCD		Mean 4 = 6.333 ABCD	BRIGHTSTAR
Mean	25 = 7.000 ABC		Mean 8 = 6.333 ABCD	DEL DWY
Mean	26 = 6.000 ABCD		Mean 37 = 6.333 ABCD	RIV II
Mean	27 = 5.667 ABCD		Mean 29 = 6.333 ABCD	RACER
Mean	28 = 5.667 ABCD		Mean 12 = 6.333 ABCD	BLAZER III
Mean	29 = 6.333 ABCD		Mean 3 = 6.333 ABCD	TPR 96 P
Mean	30 = 6.667 ABCD		Mean 46 = 6.333 ABCD	SHERWOOD
Mean	31 = 5.667 ABCD		Mean 39 = 6.000 ABCD	PENNPIKE
Mean	32 = 6.667 ABCD		Mean 26 = 6.000 ABCD	MAN.
Mean	33 = 7.000 ABC		Mean 20 = 6.000 ABCD	ELF
Mean	34 = 7.000 ABC		Mean 11 = 6.000 ABCD	LYN
Mean	35 = 6.667 ABCD		Mean 18 = 6.000 ABCD	TPR 96 C
Mean	36 = 6.667 ABCD		Mean 45 = 6.000 ABCD	Pinnacle
Mean	37 = 6.333 ABCD		Mean 27 = 5.667 ABCD	PRELUDER II
Mean	38 = 6.667 ABCD		Mean 28 = 5.667 ABCD	TPR 96 A
"	39 = 6.000 ABCD		Mean 43 = 5.667 ABCD	LP O-93
Mean	40 = 6.667 ABCD		Mean 31 = 5.667 ABCD	LONGBOW
Mean	41 = 6.667 ABCD		Mean 17 = 5.667 ABCD	EDGE
Mean	42 = 5.000 CDE		Mean 10 = 5.333 BCD	DERBY SUP
Mean	43 = 5.667 ABCD		Mean 9 = 5.333 BCD	TPR 96 B
Mean	44 = 4.667 DE		Mean 42 = 5.000 CDE	
Mean	45 = 6.000 ABCD		Mean 44 = 4.667 DE	
Mean	46 = 6.333 ABCD		Mean 16 = 3.000 E	LORETTA NOVA

200100241

Table 3A. Winter color in 1998 of perennial ryegrass cv Dandy II.
 (Code names PR 97 DII) compared with other cultivars transplanted November 1997 to spaced plant plots near Corvallis, Oregon.

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP
 Case Range 139-184 Variable 18: WINTER COLOR 1=LIGHT GREEN

2=MEDIUM GREEN, 3=DARK GREEN, 4=BLUE

Randomized complete block design, 3 replications

Observations to calculate mean = 3, Least significant difference test

Error mean square = 0.2240 Error degrees of freedom = 90

LSD value = 0.7677 at alpha = 0.050

	Original Order	Ranked Order	LINE
Mean	1 = 3.000 BCD	Mean 22 = 4.000 A	
Mean	2 = 2.667 CDE	Mean 30 = 4.000 A	
Mean	3 = 3.000 BCD	Mean 14 = 3.667 AB	JIPPIE
Mean	4 = 3.333 ABC	Mean 32 = 3.667 AB	LP Q-93
Mean	5 = 2.333 DE	Mean 33 = 3.667 AB	LP BB-93
Mean	6 = 2.667 CDE	Mean 12 = 3.667 AB	
Mean	7 = 3.333 ABC	Mean 36 = 3.667 AB	PR 97 EL2
Mean	8 = 2.667 CDE	Mean 31 = 3.667 AB	LP O-93
Mean	9 = 2.667 CDE	Mean 34 = 3.667 AB	SUNBRIGHT
Mean	10 = 2.667 CDE	Mean 4 = 3.333 ABC	BRIGHTSTAR
Mean	11 = 3.000 BCD	Mean 18 = 3.333 ABC	LYNX
Mean	12 = 3.667 AB	Mean 28 = 3.333 ABC	PRELUDR II
Mean	13 = 3.000 BCD	Mean 43 = 3.333 ABC	TPR 96 A
"	14 = 3.667 AB	Mean 42 = 3.333 ABC	
Mean	15 = 1.333 P	Mean 24 = 3.333 ABC	PALMER II
Mean	16 = 2.667 CDE	Mean 7 = 3.333 ABC	CUTTER
Mean	17 = 2.667 CDE	Mean 29 = 3.000 BCD	RACER
Mean	18 = 3.333 ABC	Mean 27 = 3.000 BCD	Pinnacle
Mean	19 = 2.000 EF	Mean 3 = 3.000 BCD	BLAZER III
Mean	20 = 2.000 EF	Mean 1 = 3.000 BCD	ACHIEVER
Mean	21 = 2.333 DE	Mean 23 = 3.000 BCD	MORN. STAR
Mean	22 = 4.000 A	Mean 40 = 3.000 BCD	SUNSHINE
Mean	23 = 3.000 BCD	Mean 37 = 3.000 BCD	TPR 97 DII = Dandy II
Mean	24 = 3.333 ABC	Mean 35 = 3.000 BCD	ELF
Mean	25 = 2.667 CDE	Mean 11 = 3.000 BCD	HEADSTART
Mean	26 = 2.000 EF	Mean 13 = 3.000 BCD	TPR 96 P
Mean	27 = 3.000 BCD	Mean 46 = 3.000 BCD	TPR 96 C
Mean	28 = 3.333 ABC	Mean 45 = 3.000 BCD	TPR 96 B
Mean	29 = 3.000 BCD	Mean 44 = 2.667 CDE	DEL DWP
Mean	30 = 4.000 A	Mean 8 = 2.667 CDE	LORETTA NOVA
Mean	31 = 3.667 AB	Mean 16 = 2.667 CDE	EDGE
Mean	32 = 3.667 AB	Mean 10 = 2.667 CDE	PANTHER
Mean	33 = 3.667 AB	Mean 25 = 2.667 CDE	DERBY SUP
Mean	34 = 3.667 AB	Mean 9 = 2.667 CDE	LOWGROW
Mean	35 = 3.000 BCD	Mean 17 = 2.667 CDE	CIT II
Mean	36 = 3.667 AB	Mean 6 = 2.667 CDE	ADVANTAGE
Mean	37 = 3.000 BCD	Mean 2 = 2.667 CDE	CALYPSO II
Mean	38 = 2.333 DE	Mean 5 = 2.333 DE	SHERWOOD
"	39 = 2.333 DE	Mean 39 = 2.333 DE	MAR II
Mean	40 = 3.000 BCD	Mean 21 = 2.333 DE	SATURN
Mean	41 = 2.333 DE	Mean 38 = 2.333 DE	TARGET
Mean	42 = 3.333 ABC	Mean 41 = 2.333 DE	PENNFINE
Mean	43 = 3.333 ABC	Mean 26 = 2.000 EF	MAR.
Mean	44 = 2.667 CDE	Mean 20 = 2.000 EF	MAGIC
Mean	45 = 3.000 BCD	Mean 19 = 2.000 EF	LINN
Mean	46 = 3.000 BCD	Mean 15 = 1.333 P	

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Table 4A. Percent rough vs smooth rachis in perennial ryegr. cv Dandy II
 (Code names PR 97 DII) in 1998 compared to other cultivars transplanted November 1997 to spaced plant plots near Corvallis, Oregon.

Ref. pickseed West, Inc. Research Facility, Data File 98PRPVP
 Case Range: 139-184 Variable 15: % ROUGH VS SMOOTH, SMOOTH = 1 Rough = 2
 Randomized complete block design, 3 replications
 Observations to calculate mean = 3 Least significant difference test
 Error mean square = 0.01100 Error degrees of freedom = 90
 LSD value = 0.1701 at alpha = 0.050

	Original Order		Ranked Order		LINEx	PERCENT	
						Rough	Smooth
Mean	1 =	1.633	GH	Mean 8 =	1.957 A	DOL DWY	
Mean	2 =	1.700	DEFGH	Mean 21 =	1.933 AB	HORN STAR	
Mean	3 =	1.783	BCDEFG	Mean 13 =	1.917 ABC	HEADSTART	-
Mean	4 =	1.850	ABCD	Mean 38 =	1.917 ABC	SATURN	
Mean	5 =	1.757	BCDEFGH	Mean 37 =	1.917 ABC	RY II	
Mean	6 =	1.817	ABCD?F	Mean 21 =	1.857 ABCD	MAN II	
Mean	7 =	1.800	ABCDE?G	Mean 41 =	1.857 ABCD	TARGET	
Mean	8 =	1.957	A	Mean 27 =	1.857 ABCD	Pinnacle	
Mean	9 =	1.633	GH	Mean 20 =	1.850 ABCD	MAN	
Mean	10 =	1.833	ABCD?	Mean 4 =	1.850 ABCD	BRIGHTSTAR	
Mean	11 =	1.833	ABCD?	Mean 11 =	1.817 ABCDE	ZEP	83
Mean	12 =	1.757	BCDEFGH	Mean 13 =	1.817 ABCDE	MAGIC	83
Mean	13 =	1.917	A?C	Mean 10 =	1.817 ABCDE	EDGE	17
"	14 =	1.757	BCDEFGH	Mean 33 =	1.817 ABCDE?	LP 83-93	
Mean	15 =	1.700	DEFGH	Mean 23 =	1.817 ABCDE?	PALMLOOS II	
Mean	16 =	1.333	I	Mean 6 =	1.817 ABCDE?	CIT II	
Mean	17 =	1.783	BCDEFG	Mean 35 =	1.817 ABCDE?	PR 97 DII = Dandy II	82
Mean	18 =	1.783	BCDE?G	Mean 7 =	1.800 ABCDE?G	CUTTER	
Mean	19 =	1.833	ABCD?	Mean 25 =	1.800 ABCDE?G	PANTHER	
Mean	20 =	1.850	ABCD	Mean 32 =	1.800 ABCDE?G	LP Q-93	
Mean	21 =	1.857	ABCD	Mean 31 =	1.800 ABCD?G	LP O-93	
Mean	22 =	1.633	GH	Mean 3 =	1.783 BCDE?G	BLAZER III	
Mean	23 =	1.933	AB	Mean 24 =	1.783 BCDE?G	PALMER II	
Mean	24 =	1.783	BCDE?G	Mean 17 =	1.783 BCDE?G	LONGROW	
Mean	25 =	1.800	ABCDE?G	Mean 30 =	1.783 BCDE?G	SUNBRIGHT	
Mean	26 =	1.783	BCDE?G	Mean 34 =	1.783 BCDE?G	PENNPIKE	
Mean	27 =	1.867	A?CD	Mean 26 =	1.783 BCDE?G	LYNX	
Mean	28 =	1.817	ABCD?	Mean 18 =	1.783 BCDE?G	JIFFIE	
Mean	29 =	1.650	FGH	Mean 14 =	1.757 BCDEFGH	CALYPSO II	
Mean	30 =	1.783	BCDEFG	Mean 5 =	1.757 BCDEFGH		
Mean	31 =	1.800	ABCDE?G	Mean 12 =	1.757 BCDEFGH	PR 97 BL2	75
Mean	32 =	1.800	ABCDEF	Mean 36 =	1.750 DEFGH	TPR 96 C	73
Mean	33 =	1.817	ABCD?	Mean 45 =	1.733 DEFGH	SHREWWOOD	
Mean	34 =	1.783	BCD?FG	Mean 39 =	1.733 DEFGH	TPR 96 A	73
Mean	35 =	1.817	ABCD?	Mean 43 =	1.733 DEFGH	SUNSHINE	27
Mean	36 =	1.750	CD?FGH	Mean 40 =	1.700 DEFGH	LINX	
Mean	37 =	1.917	A?C	Mean 15 =	1.700 DEFGH	ADVANTAGE	
Mean	38 =	1.917	A?C	Mean 2 =	1.700 DEFGH		
"	39 =	1.733	DEFGH	Mean 42 =	1.667 E?GH		
Mean	40 =	1.700	DE?GH	Mean 46 =	1.650 FGH	TPR 96 P	65
Mean	41 =	1.867	A?CD	Mean 29 =	1.650 PGH	WACER	
Mean	42 =	1.567	E?GH	Mean 9 =	1.633 GH	D2287 SUP	
Mean	43 =	1.733	DE?GH	Mean 22 =	1.633 GH		
Mean	44 =	1.600	H	Mean 1 =	1.633 GH	ACHIEVER	
Mean	45 =	1.733	DEFGH	Mean 44 =	1.600 H	TPR 96 B	60
Mean	46 =	1.650	FGH	Mean 16 =	1.333 I	LOSETTA NOVA	40

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Table 5A. Flag leaf height in 1998 of perennial ryegrass cv Dandy II
 (Code names PR 97 DII) compared with other cultivars transplanted November 1997 to spaced plant plots near Corvallis, Oregon.

Ref. pickseed West, Inc. Research Facility, Data File 98PRPVP

Case Range: 139-184, Variable 14; FLAG LEAF HEIGHT (CM)

Randomized complete block design, 3 replications

Observations to calculate mean = 3, Least significant difference test

Error mean square = 4.030 Error degrees of freedom = 90

LSD value = 3.256 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 25.82 ABCDEF	IJKLMNOPQR	Mean 20 = 29.00 A		MAN.
Mean	2 = 21.70		Mean 3 = 26.78 AB		BLAZER III
Mean	3 = 26.78 AB		Mean 9 = 26.52 ABC		DERBY SUP
Mean	4 = 22.38 GHIJKLMNOPQ		Mean 5 = 26.40 ABCD		CALYPSO II
Mean	5 = 26.40 ABCD		Mean 17 = 26.16 ABCDE		LONGGROW
Mean	6 = 23.73 BCDEFGHIJKLM		Mean 35 = 26.08 ABCDE		PR 97 DII = Dandy II
Mean	7 = 22.69 FGHIJKLMNOP		Mean 1 = 25.82 ABCDEF		ACHIEVER
Mean	8 = 25.15 BCDEFGH		Mean 15 = 25.43 BCDEFG		LINN
Mean	9 = 26.52 ABC		Mean 28 = 25.39 BCDEFG		PRELUDE II
Mean	10 = 24.91 BCDEFGHI		Mean 21 = 25.23 BCDEFG		MAN II
Mean	11 = 23.90 BCDEFGHIJKLM		Mean 8 = 25.15 BCDEFGH		DEL DWF
Mean	12 = 22.54 GHIJKLMNOPQ		Mean 19 = 25.14 BCDEFGH		MAGIC
Mean	13 = 21.50 KLMNOPQR		Mean 10 = 24.91 BCDEFGHI		EDGE
"	14 = 22.96 EFGHIJKLMNOP		Mean 44 = 24.89 BCDEFGHIJ		TPR 96 B
Mean	15 = 25.48 BCDEFG	NOPQR	Mean 45 = 24.76 BCDEFGHIJ		TPR 96 C
Mean	16 = 20.29		Mean 38 = 24.69 BCDEFGHIJK		SATURN
Mean	17 = 26.16 ABCDE	JKLMNOPQR	Mean 23 = 24.50 BCDEFGHIJKL		MORN STAR
Mean	18 = 21.65		Mean 11 = 23.90 BCDEFGHIJKLM		ELF
Mean	19 = 25.14 BCDEFGH		Mean 6 = 23.73 BCDEFGHIJKLM		CIT II
Mean	20 = 29.00 A		Mean 25 = 23.70 BCDEFGHIJKLM		PANTHER
Mean	21 = 25.23 BCDEFG	LMNOPQR	Mean 37 = 23.65 BCDEFGHIJKLM		RIV II
Mean	22 = 21.28		Mean 39 = 23.58 BCDEFGHIJKLM		SHERWOOD
Mean	23 = 24.50 BCDEFGHIJKLM		Mean 27 = 23.40 CDEFGHIJKLMN		Pinnacle
Mean	24 = 19.83 OPQR		Mean 46 = 23.21 DEFGHIJKLMN		TPR 96 P
Mean	25 = 23.70 BCDEFGHIJKLM		Mean 42 = 23.09 EPGHIJKLMN		JIFFIE
Mean	26 = 22.59 FGHIJKLMNOP		Mean 14 = 22.96 EPGHIJKLMNO		PR 97 EL2
Mean	27 = 23.40 CDEFGHIJKLMN		Mean 36 = 22.93 EPGHIJKLMNO		CUTTER
Mean	28 = 25.39 BCDEFG	R	Mean 7 = 22.69 FGHIJKLMNOP		PENNFINE
Mean	29 = 21.97 HIJKLMNOPQR		Mean 26 = 22.59 FGHIJKLMNOP		TPR 96 A
Mean	30 = 19.31 QR		Mean 43 = 22.58 FGHIJKLMNOP		TARGET
Mean	31 = 19.72 OPQR		Mean 41 = 22.54 GHIJKLMNOPQ		
Mean	32 = 22.38 GHIJKLMNOPQ		Mean 12 = 22.54 GHIJKLMNOPQ		BRIGHTSTAR
Mean	33 = 18.94 R		Mean 4 = 22.38 GHIJKLMNOPQ		LP Q-93
Mean	34 = 20.91 MNOPQR		Mean 32 = 22.38 GHIJKLMNOPQ		RACER
Mean	35 = 26.08 ABCDE		Mean 29 = 21.97 HIJKLMNOPQR		ADVANTAGE
Mean	36 = 22.93 EFGHIJKLMNOP		Mean 2 = 21.70 IJKLMNOPQR		LYNX
Mean	37 = 23.65 BCDEFGHIJKLM		Mean 18 = 21.65 JKLMNOPQR		HEADSTART
Mean	38 = 24.69 BCDEFGHIJK		Mean 13 = 21.50 KLMNOPQR		
"	39 = 23.58 BCDEFGHIJKLM	PQR	Mean 22 = 21.28 LMNOPQR		
Mean	40 = 19.55		Mean 34 = 20.91 MNOPQR		SUNBRIGHT
Mean	41 = 22.54 GHIJKLMNOPQ		Mean 16 = 20.29 NOPQR		LORETTA NOVA
Mean	42 = 23.09 EFGHIJKLMN		Mean 24 = 19.83 OPQR		PALMER II
Mean	43 = 22.58 FGHIJKLMNP		Mean 31 = 19.72 OPQR		LP Q-93
Mean	44 = 24.89 BCDEFGHIJ		Mean 40 = 19.55 PQR		SUNSHINE
Mean	45 = 24.76 BCDEFGHIJ		Mean 30 = 19.31 QR		
Mean	46 = 23.21 DEFHIJKLMN		Mean 33 = 18.94 R		LP BB-93

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Table 6A. Flag leaf width in 1998 of perennial ryegrass cv Dandy II
 (Code names PR 97 DII) compared with other cultivars trans-
 planted to spaced plant plots in November 1997 near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data file 98PRPVP
 Case Range; 139-184, Variable 7; FLAG LEAF WIDTH (MM)

Randomized complete block design, 3 replications

Observations to calculate mean = 3, Least significant difference test

Error mean square = 0.5800, Error degrees of freedom = 90

LSD value = 0.3907 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 2.593	CDEFGHIJKLMNOP	Mean	20 = 3.210 A	MAN
Mean	2 = 2.410	HJKLMNOP	Mean	5 = 3.003 AB	CALYPSO II
Mean	3 = 2.793	BCD&FGH	Mean	6 = 2.933 ABC	CIT II
Mean	4 = 2.520	EFGHIJKLMNOP	Mean	17 = 2.913 ABCD	LONGROW
Mean	5 = 3.003 AB		Mean	15 = 2.993 ABCDE	LINN
Mean	6 = 2.933 ABC		Mean	23 = 2.870 ABCDEF	MORN STAR
Mean	7 = 2.550	CDEFGHIJKLMNOP	Mean	19 = 2.840 ABCDEFG	MAGIC
Mean	8 = 2.837	ABCDEF	Mean	8 = 2.837 ABCDEFG	DEL DWF
Mean	9 = 2.660	BCDEFGHIJKL	Mean	3 = 2.793 BCDEFGH	BLAZER III
Mean	10 = 2.653	BCDEFGHIJKL	Mean	18 = 2.770 BCDEFGHI	LYNK
Mean	11 = 2.720	BCDEFGHIJ	Mean	11 = 2.720 BCDEFGHIJ	ELF
Mean	12 = 2.620	BCDEFGHIJKL	Mean	25 = 2.720 BCDEFGHIJ	PANTHER
Mean	13 = 2.460	GHIJKLMNOP	Mean	28 = 2.693 BCDEFGHIJK	PRELUDZ II
"	14 = 2.487	EFGHIJKLMNOP	Mean	45 = 2.687 BCDEFGHIJKL	TPR 96 C
Mean	15 = 2.893	ABCDE	Mean	42 = 2.677 BCDEFGHIJKL	DERBY SUP
Mean	16 = 2.603	CDEFGHIJKLM	Mean	9 = 2.650 BCDEFGHIJKL	EDGE
Mean	17 = 2.913	ABCD	Mean	10 = 2.653 BCDEFGHIJKL	BIV II
Mean	18 = 2.770	BCDEFGHI	Mean	37 = 2.633 BCDEFGHIJKLM	MAN II
Mean	19 = 2.840	ABCDEF	Mean	21 = 2.627 BCDEFGHIJKLM	PENNFINE
Mean	20 = 3.210 A		Mean	12 = 2.620 BCDEFGHIJKLM	TPR 96 B
Mean	21 = 2.627	BCDEFGHIJKLM	Mean	26 = 2.617 BCDEFGHIJKLM	LORSETTA NOVA
Mean	22 = 2.483	EFGHIJKLMNOP	Mean	44 = 2.610 BCDEFGHIJKLM	ACHIEVER
Mean	23 = 2.870	ABCDE	Mean	16 = 2.603 BCDEFGHIJKLM	SHERWOOD
Mean	24 = 2.253	MN	Mean	1 = 2.593 BCDEFGHIJKLM	CUTTER
Mean	25 = 2.720	BCDEFGHIJ	Mean	39 = 2.583 BCDEFGHIJKLM	TPR 96 P
Mean	26 = 2.617	BCDEFGHIJKLM	Mean	7 = 2.550 BCDEFGHIJKLM	SATURN
Mean	27 = 2.403	HJKLMNOP	Mean	46 = 2.547 BCDEFGHIJKLM	BRIGHTSTAR
Mean	28 = 2.693	BCDEFGHIJK	Mean	38 = 2.537 BCDEFGHIJKLM	TPR 96 A
Mean	29 = 2.327	KLMN	Mean	4 = 2.520 BCDEFGHIJKLM	PR 97 BL2
Mean	30 = 2.203	N	Mean	43 = 2.500 EFGHIJKLM	JIFFIE
Mean	31 = 2.397	IJKLMN	Mean	36 = 2.487 EFGHIJKLM	PR 97 DII = Dandy II
Mean	32 = 2.253	MN	Mean	14 = 2.487 GHIJKLM	HEADSTART
Mean	33 = 2.437	HJKLMNOP	Mean	22 = 2.483 GHIJKLM	TARGET
Mean	34 = 2.337	JKLMN	Mean	35 = 2.477 GHIJKLM	LP BB-93
Mean	35 = 2.477	GHIJKLM	Mean	13 = 2.460 GHIJKLM	ADVANTAGE
Mean	36 = 2.487	EFGHIJKLM	Mean	41 = 2.443 GHIJKLM	Pinnacle
Mean	37 = 2.633	BCDEFGHIJKLM	Mean	33 = 2.437 GHIJKLM	LP 0-93
Mean	38 = 2.537	D EFGHIJKLM	Mean	2 = 2.410 GHIJKLM	SUNBRIGHT
"	39 = 2.580	CDEFGHIJKLM	Mean	27 = 2.403 GHIJKLM	RACER
Mean	40 = 2.300	LMN	Mean	31 = 2.397 GHIJKLM	SUNSHINE
Mean	41 = 2.443	HJKLMNOP	Mean	34 = 2.337 GHIJKLM	PALMER II
Mean	42 = 2.677	BCDEFGHIJKL	Mean	29 = 2.327 GHIJKLM	LP Q-93
Mean	43 = 2.500	EFGHIJKLM	Mean	40 = 2.300 GHIJKLM	
Mean	44 = 2.610	CDEFGHIJKLM	Mean	24 = 2.253 GHIJKLM	
Mean	45 = 2.687	BCDEFGHIJKL	Mean	32 = 2.253 GHIJKLM	
Mean	46 = 2.547	CDEFGHIJKLM	Mean	30 = 2.203 GHIJKLM	

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Table 7A. Flag leaf length in 1998 of perennial ryegrass cv Dandy II
 (Code No's. PR 97 DII) compared with other cultivars trans-
 planted to spaced plant plots in November 1997 near Corvallis, Oregon.

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP

Randomized complete block design, three replications

Analysis of variance with LSD mean separation

Case range: 139-184, variable 5: FLAG LEAF LENGTH (CM)

Error Mean Square = 0.9230, Error Degrees of Freedom = 90

Observations to calculate mean = 3, Least Significant Difference Test

LSD value = 1.558 at alpha = 0.050

	Original Order	Ranked Order	LINE
Mean	1 = 6.907	JKLNN	MANHATTAN
Mean	2 = 7.507	GHIJKLN	LORETTA NOVA
Mean	3 = 8.210	DZFGHIJKLMNOP	LONGGROW
Mean	4 = 7.363	GHIJKLNN	PRESLUDE II
Mean	5 = 8.363	DZFGHIJ	DERBY SUP
Mean	6 = 7.883	EFGHIJKLMNOP	SATURN
Mean	7 = 7.107	IJKLMN	MAGIC
Mean	8 = 8.103	DZFGHIJKLMNOP	TPR 96 B
Mean	9 = 9.420	CDE	PANTHER
Mean	10 = 7.910	EFGHIJKLMNOP	CALYPSO II
Mean	11 = 7.720	FGHIJKLMNOP	LINN
Mean	12 = 7.847	FGHIJKLMNOP	LP 88-93
Mean	13 = 6.797	KLNN	BLAZER III
Mean	14 = 8.113	DZFGHIJKLMNOP	PR 97 DII = Dandy II
Mean	15 = 8.260	DZFGHIJK	MAX. II
Mean	16 = 12.92	B	JIFFIE
Mean	17 = 10.03	C	DEL. DWZ
Mean	18 = 8.073	DZFGHIJKLMNOP	TPR 96 C
Mean	19 = 8.827	CDEFG	LYNX
Mean	20 = 15.21	A	RIV. II
Mean	21 = 8.147	DZFGHIJKL	PR 97 ELZ
Mean	22 = 7.813	PGHIJKLMNOP	PENNPINZ
Mean	23 = 7.400	GHIJKLMNOP	EDGE
Mean	24 = 5.900	H	CIT. II
Mean	25 = 8.510	DZFGHI	FGHIJKLMNOP
Mean	26 = 7.913	EFGHIJKLMNOP	FGHIJKLMNOP
Mean	27 = 7.180	HJKLMN	FGHIJKLMNOP
Mean	28 = 9.480	CD	FGHIJKLMNOP
Mean	29 = 6.727	KLMN	FGHIJKLMNOP
Mean	30 = 6.573	HY	FGHIJKLMNOP
Mean	31 = 7.437	GHIJKLMNOP	SUNBRIGHT
Mean	32 = 6.683	LNN	ADVANTAGE
Mean	33 = 8.237	DZFGHIJKL	TPR 96 P
Mean	34 = 7.593	GHIJKLMNOP	LP 0-93
Mean	35 = 8.200	DZFGHIJKL	MORN. STAR
Mean	36 = 7.930	DZFGHIJKLMNOP	BRIGHTSTAR
Mean	37 = 8.053	DZFGHIJKLMNOP	PINNACLE
Mean	38 = 9.165	CDEF	SHERWOOD
Mean	39 = 7.143	HJKLMN	CUTTER
Mean	40 = 7.060	IJKLMN	SUNSHINE
Mean	41 = 7.780	FGHIJKLMNOP	ACHIEVER
Mean	42 = 8.023	DZFGHIJKLMNOP	HEADSTART
Mean	43 = 7.700	FGHIJKLMNOP	RACER
Mean	44 = 8.677	CDEFGH	LO 0-93
Mean	45 = 8.087	DZFGHIJKLMNOP	PALMER II
Mean	46 = 7.507	GHIJKLM	

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Table 8A. Spikelet length in 1998 of perennial ryegrass cv Dandy II
 (Code No's. PR 97 DII) compared with other cultivars transplanted
 to spaced plant plots in November 1997 near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP

Randomized complete block design, three replications

Analysis of variance with LSD mean separation

Case Range: 139-184, Variable 9: LENGTH OF SPIKELET (MM)

Observations to calculate mean = 3, Least Significant Difference Test

Error Mean Square = 0.6690 Error Degrees of Freedom = 90

LSD value = 1.327 at alpha = 0.050

	Original Order		Ranked Order	LINE
Mean	1 = 13.73 ABCD	Mean	3 = 14.32 A	BLAZER III
Mean	2 = 12.36 EFGH	Mean	28 = 14.22 A	PRELUDER II
Mean	3 = 14.32 A	Mean	20 = 14.00 AB	MAN.
Mean	4 = 12.74 BCDEPG	Mean	8 = 13.97 AB	DEL DWF
Mean	5 = 13.84 ABC	Mean	38 = 13.94 ABC	SATURN
Mean	6 = 13.19 ABCDEF	Mean	39 = 13.89 ABC	SHERWOOD
Mean	7 = 12.10 FGH	Mean	5 = 13.84 ABC	CALYPSO II
Mean	8 = 13.97 AB	Mean	42 = 13.84 ABC	LOWGROW
Mean	9 = 13.01 ABCDEFG	Mean	17 = 13.76 ABCD	ACHIEVER
Mean	10 = 13.73 ABCD	Mean	1 = 13.73 ABCD	EDGE
Mean	11 = 13.14 ABCDEPG	Mean	10 = 13.73 ABCD	RIV II
Mean	12 = 12.78 BCDEPG	Mean	37 = 13.54 ABCDE	TPR 96 C
Mean	13 = 13.34 ABCDEF	Mean	45 = 13.41 ABCDEF	PR 97 DII = Dandy II
"	14 = 13.24 ABCDEF	Mean	35 = 13.36 ABCDEF	LP Q-93
Mean	15 = 13.15 ABCDEFG	Mean	32 = 13.35 ABCDEF	HEADSTART
Mean	16 = 11.41 H	Mean	13 = 13.34 ABCDEF	MORN STAR
Mean	17 = 13.76 ABCD	Mean	23 = 13.34 ABCDEF	TPR 96 B
Mean	18 = 13.10 ABCDEFG	Mean	44 = 13.33 ABCDEF	JIFFIE
Mean	19 = 12.64 CDEFGH	Mean	22 = 13.25 ABCDEF	TPR 96 P
Mean	20 = 14.00 AB	Mean	14 = 13.24 ABCDEF	PINNACLE
Mean	21 = 13.13 ABCDEPG	Mean	46 = 13.23 ABCDEF	CIT II
Mean	22 = 13.25 ABCDEF	Mean	27 = 13.23 ABCDEF	LP Q-93
Mean	23 = 13.34 ABCDEF	Mean	6 = 13.19 ABCDEF	LINN
Mean	24 = 12.86 BCDEPG	Mean	31 = 13.16 ABCDEPG	ELF
Mean	25 = 13.11 ABCDEFG	Mean	15 = 13.15 ABCDEFG	MAN II
Mean	26 = 11.84 GH	Mean	11 = 13.14 ABCDEFG	PANTHER
Mean	27 = 13.23 ABCDEF	Mean	21 = 13.13 ABCDEFG	LYNX
Mean	28 = 14.22 A	Mean	25 = 13.11 ABCDEFG	RACER
Mean	29 = 13.09 ABCDEFG	Mean	18 = 13.10 ABCDEFG	TARGET
Mean	30 = 12.39 EFGH	Mean	29 = 13.09 ABCDEFG	DERBY SUP
Mean	31 = 13.16 ABCDEPG	Mean	41 = 13.04 ABCDEPG	PALMER II
Mean	32 = 13.35 ABCDEF	Mean	9 = 13.01 ABCDEPG	SUNBRIGHT
Mean	33 = 12.43 DEFGH	Mean	24 = 12.86 BCDEFG	BRIGHTSTAR
Mean	34 = 12.76 BCDEFG	Mean	12 = 12.78 BCDEFG	MAGIC
Mean	35 = 13.36 ABCDEF	Mean	34 = 12.76 BCDEFG	TPR 96 A
Mean	36 = 12.33 EFGH	Mean	4 = 12.74 BCDEFG	SUNSHINE
Mean	37 = 13.54 ABCDE	Mean	19 = 12.64 CDEFGH	LP BB-93
Mean	38 = 13.94 ABC	Mean	43 = 12.63 CDEFGH	ADVANTAGE
"	39 = 13.89 ABC	Mean	40 = 12.49 DEFGH	PR 97 EL2
Mean	40 = 12.49 DEFGH	Mean	33 = 12.43 DEFGH	CUTTER
Mean	41 = 13.04 ABCDEPG	Mean	30 = 12.39 EFGH	PENNPIRE
Mean	42 = 13.84 ABC	Mean	2 = 12.36 EFGH	LORETTA NOVA
Mean	43 = 12.63 CDEFGH	Mean	36 = 12.33 EFGH	12
Mean	44 = 13.33 ABCDEF	Mean	7 = 12.10 FGH	
Mean	45 = 13.41 ABCDEF	Mean	26 = 11.84 GH	
Mean	46 = 13.23 ABCDEF	Mean	16 = 11.41 H	

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Table 9A. Outer glume length (mm) of perennial ryegrass cv Dandy II
 (Code No's. PR 97 DII) in 1998 compared with other cultivars trans-
 planted to spaced plant plots in November 1997 near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP
 Randomized complete block design, three replications
 Case Range: 139-184, Variable 13: OUTER GLUME LENGTH (MM)
 Error Mean Square = 0.2600, Error Degrees of Freedom = 90
 Observations to calculate mean = 3, Least Significant Difference Test
 LSD value = 0.8271 at alpha = 0.050.

	Original Order		Ranked Order	LINE
Mean	1 = 8.433 ABCDEFGH	PQ	Mean 20 = 9.217 A	MAR.
Mean	2 = 7.083		Mean 27 = 9.000 AB	Pinnacle
Mean	3 = 8.343 BCDEFGHI		Mean 5 = 8.970 ABC	CALYPSO II
Mean	4 = 7.410 KLMNOPQ		Mean 15 = 8.833 ABCD	LINN
Mean	5 = 8.970 ABC		Mean 19 = 8.653 ABCDE	MAGIC
Mean	6 = 8.200 BCDEFGHIJKL		Mean 28 = 8.560 ABCDEF	PRELUDE II
Mean	7 = 7.683 GHIJKLMNOP		Mean 8 = 8.453 ABCDEFG	DEL DWY
Mean	8 = 8.453 ABCDEFG		Mean 1 = 8.433 ABCDEFGH	ACHIEVER
Mean	9 = 8.227 BCDEFGHIJK		Mean 38 = 8.403 ABCDEFGH	SATURN
Mean	10 = 7.637 GHIJKLMNOP		Mean 3 = 8.343 BCDEFGHI	BLAZER III
Mean	11 = 8.000 EFGHIJKLMNOP		Mean 41 = 8.320 BCDEFGHI	TARGET
Mean	12 = 8.243 BCDEFGHIJ		Mean 18 = 8.277 BCDEFGHIJ	LYNX
Mean	13 = 7.777 FGHIJKLMNOP		Mean 21 = 8.253 BCDEFGHIJ	MAR II
"	14 = 7.693 GHIJKLMNOP		Mean 12 = 8.243 BCDEFGHIJ	
Mean	15 = 8.833 ABCD	MNOPQ	Mean 9 = 8.227 BCDEFGHIJK	DERBY SUP
Mean	16 = 7.353		Mean 6 = 8.200 BCDEFGHIJKL	CIT II
Mean	17 = 8.020 DEFGHIJKLMNOP		Mean 29 = 8.177 BCDEFGHIJKLM	RACER
Mean	18 = 8.277 BCDEFGHIJ		Mean 43 = 8.177 BCDEFGHIJKLM	TPR 96 A
Mean	19 = 8.653 ABCDE		Mean 26 = 8.167 CDEFGHIJKLM	PENNFINE
Mean	20 = 9.217 A		Mean 45 = 8.043 DEFGHIJKLMNOP	TPR 96 C
Mean	21 = 8.253 BCDEFGHIJ	NOPQ	Mean 39 = 8.043 DEFGHIJKLMNOP	SHERWOOD
Mean	22 = 7.243		Mean 17 = 8.020 DEFGHIJKLMNOP	LOWGROW
Mean	23 = 7.750 FGHIJKLMNOP		Mean 11 = 8.000 EFGHIJKLMNOP	ELF
Mean	24 = 7.333 NOPQ		Mean 37 = 7.860 EFGHIJKLMNOP	RIV II
Mean	25 = 7.733 FGHIJKLMNOP		Mean 13 = 7.777 FGHIJKLMNOP	HEADSTART
Mean	26 = 8.167 CDEFGHIJKLM		Mean 31 = 7.760 FGHIJKLMNOP	LP 0-93
Mean	27 = 9.000 AB		Mean 23 = 7.750 FGHIJKLMNOP	MORN. STAR
Mean	28 = 8.560 ABCDEF		Mean 25 = 7.733 FGHIJKLMNOP	PANTHER
Mean	29 = 8.177 BCDEFGHIJKLM	LMNOPQ	Mean 14 = 7.693 GHIJKLMNOP	JIFFIE
Mean	30 = 7.377		Mean 7 = 7.683 GHIJKLMNOP	CUTTER
Mean	31 = 7.760 FGHIJKLMNOP		Mean 10 = 7.637 GHIJKLMNOP	EDGE
Mean	32 = 7.187 OPQ		Mean 35 = 7.627 GHIJKLMNOP	PR 97 DII = Dandy II
Mean	33 = 7.620 HIJKLMNOP		Mean 33 = 7.620 HIJKLMNOP	LP BB-93
Mean	34 = 7.243 NOPQ		Mean 42 = 7.543 IJKLNOP	
Mean	35 = 7.627 GHIJKLMNOP		Mean 44 = 7.527 IJKLNOP	TPR 96 B
Mean	36 = 6.593 Q		Mean 46 = 7.450 JKLNOP	TPR 96 P
Mean	37 = 7.860 EFGHIJKLMNOP		Mean 4 = 7.410 KLMNOPQ	BRIGHTSTAR
Mean	38 = 8.403 ABCDEFGH		Mean 30 = 7.377 LMNOPQ	
"	39 = 8.043 DEFGHIJKLMNOP	MNOPQ	Mean 40 = 7.367 MNOPQ	SUNSHINE
Mean	40 = 7.367		Mean 16 = 7.353 MNOPQ	LORETTA NOVA
Mean	41 = 8.320 BCDEFGHI		Mean 24 = 7.333 NOPQ	PALMER II
Mean	42 = 7.543 IJKLNOP		Mean 22 = 7.243 NOPQ	
Mean	43 = 8.177 BCDEFGHIJKLM		Mean 34 = 7.243 OPQ	SUNBRIGHT
Mean	44 = 7.527 IJKLNOP		Mean 32 = 7.187 OPQ	LP Q-93
Mean	45 = 8.043 DEFGHIJKLMNOP		Mean 2 = 7.083 PQ	ADVANTAGE
Mean	46 = 7.450 JKLNOP		Mean 36 = 6.593 Q	PR 97 BL2

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Table 10A. Florets per spikelet in perennial ryegrass cv Dandy II
 (Code no's. PR 97 DII) in 1998 compared with other cultivars trans-
 planted in November 1997 to spaced plant plots near Corvallis, Oregon.

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP
 Randomized complete block design, three replications

Analysis of Variance with LSD mean separation

Case Range: 139-184, Variable 10, NUMBER OF FLORETS/SPIKELET

Error Mean Square = 0.4820, Error degrees of freedom = 90

Observations to calculate mean = 3, Least significant difference test

LSD value = 1.126 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 10.33	CDEFG	Mean 42 = 12.12	A	TWF-94
Mean	2 = 10.58	BCDEFG	Mean 3 = 11.47	AB	BLAZER III
Mean	3 = 11.47	AB	Mean 39 = 11.42	ABC	SHERWOOD
Mean	4 = 10.20	EFG	Mean 20 = 11.37	ABCD	HAN.HATTAN
Mean	5 = 10.93	BCDF	Mean 23 = 11.22	ABCDF	PRELUDE II
Mean	6 = 10.25	DEFG	Mean 38 = 11.20	ABCD	SATURN
Mean	7 = 9.633	FCH	Mean 37 = 11.15	ABCDE	RIV II
Mean	8 = 10.52	BCDEFG	Mean 17 = 11.13	ABCDE	LOWGROW
Mean	9 = 10.60	BCDEFG	Mean 23 = 11.10	ABCDE	HORN. STAR
Mean	10 = 10.63	BCDEFG	Mean 25 = 11.03	ABCDE	PANTHER
Mean	11 = 10.85	BCDF	Mean 12 = 11.02	ABCDE	
Mean	12 = 11.02	ABCDE	Mean 45 = 11.00	ABCDF	TPR 96 C
"	13 = 10.78	BCDZ	Mean 5 = 10.98	BCDE	CALYPSO II
Mean	14 = 10.85	BCDE	Mean 41 = 10.97	BCDE	TARGET
Mean	15 = 10.40	BCDEFG	Mean 32 = 10.87	BCDE	LP Q-93
Mean	16 = 8.683	H	Mean 21 = 10.87	BCDE	HAN II
Mean	17 = 11.13	ABCDS	Mean 14 = 10.85	BCDE	JIFFIE
Mean	18 = 10.30	CDEFG	Mean 11 = 10.85	BCDE	ELF
Mean	19 = 10.77	BCDE	Mean 22 = 10.78	BCDZ	
Mean	20 = 11.37	ABCD	Mean 13 = 10.78	BCDE	HEADSTART
Mean	21 = 10.87	BCDE	Mean 34 = 10.77	BCDE	SUNBRIGHT
Mean	22 = 10.78	BCDZ	Mean 19 = 10.77	BCDE	MAGIC
Mean	23 = 11.10	ABCDS	Mean 40 = 10.77	BCDZ	SUNSHINE
Mean	24 = 10.13	ZFG	Mean 31 = 10.75	BCDZP	LP Q-93
Mean	25 = 11.03	ABCDE	Mean 27 = 10.70	BCDEFG	Pinnacle
Mean	26 = 9.600	GH	Mean 10 = 10.68	BCDEFG	EDGE
Mean	27 = 10.70	BCDEFG	Mean 33 = 10.68	BCDEFG	LP BB-93
Mean	28 = 11.22	ABCDE	Mean 29 = 10.63	BCDEFG	RACER
Mean	29 = 10.63	BCDEFG	Mean 35 = 10.60	BCDEFG	PR 97 DII = Dandy II
Mean	30 = 10.50	BCDEFG	Mean 9 = 10.60	BCDZFG	DERBY SUP
Mean	31 = 10.75	BCDEF	Mean 2 = 10.58	BCDEFG	ADVANTAGE
Mean	32 = 10.87	BCDE	Mean 8 = 10.52	BCDEFG	DEL DWF
Mean	33 = 10.68	BCDEFG	Mean 43 = 10.52	BCDEFG	TPR 96 A
Mean	34 = 10.77	BCDE	Mean 30 = 10.50	BCDEFG	
Mean	35 = 10.60	BCDEFG	Mean 36 = 10.48	BCDEFG	PR 97 ELZ
Mean	36 = 10.48	BCDEFG	Mean 46 = 10.45	BCDEFG	TPR 96 P
Mean	37 = 11.15	ABCDE	Mean 15 = 10.40	BCDEFG	LINK
"	38 = 11.20	ABCDE	Mean 1 = 10.33	CDEFG	ACHEIVER
Mean	39 = 11.42	ABC	Mean 18 = 10.30	CDEFG	LYNX
Mean	40 = 10.77	BCDE	Mean 44 = 10.25	DEFG	TPR 96 B
Mean	41 = 10.97	BCDE	Mean 6 = 10.25	DEFG	CIT II
Mean	42 = 12.12	A	Mean 4 = 10.20	EFG	BRIGHTSTAR
Mean	43 = 10.52	BCDZFG	Mean 24 = 10.13	EFG	PALMER II
Mean	44 = 10.25	DZFG	Mean 7 = 9.633	FCH	CUTTER
Mean	45 = 11.00	ABCDE	Mean 26 = 9.600	GH	PENNPIPE
Mean	46 = 10.45	BCDEFG	Mean 16 = 8.633	H	LORETTA NCVA

Table 11A. Number of spikelets/spike in perennial ryegr. cv. Dandy II
 (Code No's. PR 97 DII) in 1998 compared with other cultivars
 transplanted in November 1998 to spaced plant plots near Corvallis, Ore.

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP
 Randomized complete block design, three replications, Case Range 139-184
 Variable 8: NUMBER OF SPIKELETS/SPIKE Function Range
 Error Mean Square = 1.765 Error Degrees of Freedom = 90
 Observations to calculate mean = 3, Least Significant Difference Test
 LSD value = 2.155 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 19.48	EFGHIJK	Mean 20 = 25.07	A	MAN.
Mean	2 = 19.67	EFGHIJK	Mean 3 = 22.93	AB	BLAZER III
Mean	3 = 22.93 AB	CDEFGHI	Mean 16 = 22.88	B	LORETTA NOVA
Mean	4 = 20.15	CDEFGHI	Mean 41 = 22.20	BC	TARGET
Mean	5 = 20.22	CDEFGHI	Mean 23 = 22.05	BCD	MORN. STAR
Mean	6 = 20.42	CDEFGHI	Mean 17 = 21.60	BCDE	LOWGROW
Mean	7 = 18.93	GHIJKL	Mean 11 = 21.50	BCDE	ELF
Mean	8 = 20.40	CDEFGHI	Mean 45 = 21.47	BCDE	TPR 96 C
Mean	9 = 21.38 BCDE		Mean 9 = 21.38	BCDE	DERBY SUP
Mean	10 = 20.08	CDEFGHIJ	Mean 19 = 21.28	BCDE?	MAGIC
Mean	11 = 21.50 BCDE		Mean 38 = 21.07	BCDEFG	SATURN
Mean	12 = 20.23	CDEPGHI	Mean 28 = 20.85	BCDEPGH	PRELUDE II
Mean	13 = 19.85 EFGHIJK		Mean 36 = 20.82	BCDEFGH	PR 97 EL2
"	14 = 20.18 CDEFGHI	L	Mean 42 = 20.55	CDEFGHI	
Mean	15 = 17.02 L		Mean 6 = 20.42	CDEFGHI	CIT II
Mean	16 = 22.88 B		Mean 8 = 20.40	CDEFGHI	DEL DWF
Mean	17 = 21.60 BCDE		Mean 25 = 20.33	CDEFGHI	PANTHER
Mean	18 = 19.92 DEFGHIJK		Mean 35 = 20.25	CDEFGHI	PR 97 DII = Dandy II
Mean	19 = 21.28 BCDEF		Mean 12 = 20.23	CDEFGHI	
Mean	20 = 25.07 A		Mean 5 = 20.22	CDEFGHI	CALYPSO II
Mean	21 = 20.15 CDEFGHI		Mean 44 = 20.20	CDEFGHI	TPR 96 B
Mean	22 = 19.17 FGHIJKL		Mean 26 = 20.20	CDEFGHI	PENNPIPE
Mean	23 = 22.05 BCD		Mean 46 = 20.20	CDEFGHI	TPR 96 P
Mean	24 = 17.98 JKL		Mean 14 = 20.18	CDEFGHI	JIFFIE
Mean	25 = 20.33 CDEPGHI		Mean 21 = 20.15	CDEFGHI	MAN II
Mean	26 = 20.20 CDEFGHI		Mean 4 = 20.15	CDEFGHI	BRIGHTSTAR
Mean	27 = 18.48 IJKL		Mean 10 = 20.08	CDEFGHIJ	EDGE
Mean	28 = 20.85 BCDEFGH		Mean 43 = 19.93	DEFGHIJK	TPR 96 A
Mean	29 = 18.85 HIJKL		Mean 18 = 19.92	DEFGHIJK	LYNX
Mean	30 = 18.48 IJKL		Mean 13 = 19.85	EPGHIJK	HEADSTART
Mean	31 = 18.63 IJKL		Mean 2 = 19.67	EPGHIJK	ADVANTAGE
Mean	32 = 19.05 GHJKL		Mean 39 = 19.60	EPGHIJK	SHERWOOD
Mean	33 = 17.90 KL		Mean 37 = 19.57	EPGHIJK	RIV II
Mean	34 = 18.91 GHJKL		Mean 1 = 19.48	EPGHIJK	ACHIEVER
Mean	35 = 20.25 CDEFGHI		Mean 22 = 19.17	FGHIJKL	
Mean	36 = 20.82 BCDEPGH		Mean 32 = 19.05	GHJKL	LP Q-93
Mean	37 = 19.57 EFGHIJK		Mean 7 = 18.93	GHJKL	CUTTER
Mean	38 = 21.07 BCDEFG		Mean 34 = 18.91	GHJKL	SUNBRIGHT
"	39 = 19.60 EFGHIJK		Mean 29 = 18.85	HJKL	RACER
Mean	40 = 17.27 L		Mean 31 = 18.63	IJKL	LP O-93
Mean	41 = 22.20 BC		Mean 30 = 18.48	IJKL	
Mean	42 = 20.55 CDEFGHI		Mean 27 = 18.48	IJKL	PINNACLE
Mean	43 = 19.93 DEFGHIJK		Mean 24 = 17.98	JKL	PALMER II
Mean	44 = 20.20 CDEFGHI		Mean 33 = 17.90	KL	LP BB-93
Mean	45 = 21.47 BCDE		Mean 40 = 17.27	L	SUNSHINE
Mean	46 = 20.20 CDEFGHI		Mean 15 = 17.02	L	LINN

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Table 12A. Plant height in winter (CM) of perennial ryegr. cv. Dandy II
 (Code No's. PR 97 DII) in 1998 compared with other cultivars
 transplanted November 1997 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP
 Randomized complete block design, three replications, Case Range: 139-184
 Variable 17: PLANT HEIGHT (CM) Function Range
 Error Mean Square = 9.572 Error Degrees of Freedom = 90
 Observations to calculate mean = 3, Least Significant Difference Test
 LSD value = 5.019 at alpha = 0.050

	Original Order		Ranked Order	LINE
Mean 1 =	55.79 ABCD		Mean 3 = 57.00 A	BLAZER III
Mean 2 =	46.87	MNOPQ	Mean 8 = 56.70 A	DEL DWY
Mean 3 =	57.00 A		Mean 15 = 56.53 AB	LINN
Mean 4 =	46.64	MNOPQ	Mean 9 = 56.48 AB	DERBY SUP
Mean 5 =	55.30 ABCD		Mean 44 = 56.11 ABC	TPR 96 B
Mean 6 =	54.24 ABCDEFGH		Mean 37 = 56.08 ABC	RIV II
Mean 7 =	51.19 CDEFGHIJKLM		Mean 1 = 55.79 ABCD	ACHIEVER
Mean 8 =	56.70 A		Mean 20 = 55.58 ABCD	MAR.
Mean 9 =	56.48 AB		Mean 5 = 55.30 ABCD	CALYPSO II
Mean 10 =	54.31 ABCDEFGH		Mean 28 = 55.24 ABCD	PRELUDE II
Mean 11 =	53.51 ABCDEFGHIJ		Mean 17 = 54.90 ABCDE	LONGROW
Mean 12 =	49.82 FGHJKLMNO		Mean 35 = 54.81 ABCDEF	PR 97 DII = Dandy II
Mean 13 =	49.74 GHIJKLMNOP		Mean 23 = 54.57 ABCDEFG	MORN. STAR
Mean 14 =	51.52 BCDEFGHIJKLM		Mean 10 = 54.31 ABCDEFGH	EDGE
Mean 15 =	56.53 AB	R	Mean 21 = 54.25 ABCDEFGH	MAR II
Mean 16 =	41.17	R	Mean 6 = 54.24 ABCDEFGH	CIT II
Mean 17 =	54.90 ABCDE		Mean 45 = 53.83 ABCDEFGHI	TPR 96 C
Mean 18 =	50.85 DEFGHIJKLMN		Mean 38 = 53.68 ABCDEFGHIJ	SATURN
Mean 19 =	52.68 ABCDEFGHIJK		Mean 11 = 53.51 ABCDEFGHIJ	ELF
Mean 20 =	55.58 ABCD		Mean 26 = 53.06 ABCDEFGHIJ	PENNFINE
Mean 21 =	54.25 ABCDEFGH		Mean 19 = 52.68 ABCDEFGHIJK	MAGIC
Mean 22 =	47.25	MNOPQ	Mean 46 = 52.46 ABCDEFGHIJK	TPR 96 P
Mean 23 =	54.57 ABCDEFG		Mean 39 = 52.21 ABCDEFGHIJKL	SHERWOOD
Mean 24 =	45.96 NOPQR		Mean 14 = 51.52 BCDEFGHIJKLM	JIFFIE
Mean 25 =	50.20 EPGHIJKLMN		Mean 7 = 51.19 CDEFGHIJKLMN	CUTTER
Mean 26 =	53.06 ABCDEFGHIJ		Mean 43 = 51.00 DEFGHIJKLMN	TPR 96 A
Mean 27 =	50.11 EPGHIJKLMN		Mean 42 = 50.88 DEFGHIJKLMN	
Mean 28 =	55.24 ABCD		Mean 18 = 50.85 DEFGHIJKLMN	LYNX
Mean 29 =	48.89 IJKLMNOPQ		Mean 25 = 50.20 EPGHIJKLMN	PANTHER
Mean 30 =	45.06 OPQR		Mean 27 = 50.11 EPGHIJKLMN	PINNACLE
Mean 31 =	47.92 KLMNOPQ		Mean 12 = 49.82 EPGHIJKLMN	
Mean 32 =	49.56 GHIJKLMNP		Mean 13 = 49.74 GHIJKLMNP	HEADSTART
Mean 33 =	47.33 LMNOPQ		Mean 32 = 49.56 GHIJKLMNP	LP Q-93
Mean 34 =	44.52 QR		Mean 41 = 49.55 HIJKLMNP	TARGET
Mean 35 =	54.81 ABCDEF		Mean 29 = 48.89 IJKLMNOPQ	RACER
Mean 36 =	48.70 JKLMNOPQ		Mean 36 = 48.70 JKLMNOPQ	PR 97 BL2
Mean 37 =	56.08 ABC		Mean 31 = 47.92 KLMNOPQ	LP Q-93
Mean 38 =	53.68 ABCDEFGHIJ		Mean 33 = 47.33 LMNOPQ	LP BB-93
Mean 39 =	52.21 ABCDEFGHIJKL		Mean 22 = 47.25 LMNOPQ	
Mean 40 =	44.80 PQR		Mean 2 = 46.87 MNOPQ	ADVANTAGE
Mean 41 =	49.55 HIJKLMNP		Mean 4 = 46.64 MNOPQ	BRIGHTSTAR
Mean 42 =	50.88 DEFGHIJKLMN		Mean 24 = 45.96 NOPQR	PALMER II
Mean 43 =	51.00 DEFGHIJKLM		Mean 30 = 45.06 OPQR	
Mean 44 =	56.11 ABC		Mean 40 = 44.80 PQR	SUNSHINE
Mean 45 =	53.83 ABCDEFGHI		Mean 34 = 44.52 QR	SUNBRIGHT
Mean 46 =	52.46 ABCDEFGHIJK		Mean 16 = 41.17 R	LORETTA NOVA

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Table 13A. Spike length (cm) in 1998 of perennial ryegr. cv. Dandy II
 (Code No's. PR 97 DII) compared with other cultivars trans-
 planted November 1997 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP
 Randomized complete block design, three replications, Case Range: 139-184
 Variable 16: SPIKE LENGTH (CM) Function Range
 Error Mean Square = 1.098 Error Degrees of Freedom = 90
 Observations to calculate mean = 3, Least Significant Difference Test
 LSD value = 1.700 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 17.33	CDEFGHIJ	Mean	20 = 21.68 A	
Mean	2 = 15.81	IJKLNN	Mean	17 = 19.56 B	MAN.
Mean	3 = 18.93	BC	Mean	3 = 18.93 BC	LONGGROW
Mean	4 = 15.90	IJKLNN	Mean	9 = 18.82 BC	BLAZER III
Mean	5 = 17.99	BCDEF	Mean	28 = 18.77 BC	DERRBY SUP
Mean	6 = 17.83	CDEFGH	Mean	23 = 18.73 BC	PRELUDE II
Mean	7 = 15.57	KLMNO	Mean	8 = 18.57 BCD	MORN. STAR
Mean	8 = 18.57	BCD	Mean	38 = 18.55 BCD	DEL DWF
Mean	9 = 18.82	BC	Mean	19 = 18.45 BCD	SATURN
Mean	10 = 17.87	BCDEFGH	Mean	11 = 18.40 BCD	MAGIC
Mean	11 = 18.40	BCD	Mean	41 = 18.32 BCDE	ELF
Mean	12 = 15.65	JJKLMNO	Mean	5 = 17.99 BCDEF	TARGET
Mean	13 = 15.62	KLMNO	Mean	37 = 17.90 BCDEFG	CALYPSO II
"	14 = 16.66	EFGHIJKLMNOP	Mean	10 = 17.87 BCDEFGH	RIV II
Mean	15 = 16.50	FGHijkl	Mean	6 = 17.83 CDEFGH	EDGE
Mean	16 = 16.27	GHIJKL	Mean	21 = 17.60 CDEFGH	CIT II
Mean	17 = 19.56	B	Mean	39 = 17.45 CDEFGHI	MAN II
Mean	18 = 16.23	GHIJKL	Mean	1 = 17.33 CDEFGHIJ	SHERWOOD
Mean	19 = 18.45	BCD	Mean	27 = 16.99 DEFGHIJK	ACHIEVER
Mean	20 = 21.68	A	Mean	44 = 16.98 DEFGHIJK	PINNACLE
Mean	21 = 17.60	CDEFGH	Mean	35 = 16.97 DEFGHIJK	TPR 96 B
Mean	22 = 14.78	MNOP	Mean	14 = 16.66 EFGHIJKL	PR 97 DII = Dandy II
Mean	23 = 18.73	BC	Mean	26 = 16.62 FGHijkl	JIPPIE
Mean	24 = 14.27	NOP	Mean	15 = 16.50 GHIJKL	PENNPIPE
Mean	25 = 15.74	JJKLMNO	Mean	16 = 16.27 GHIJKL	LINN
Mean	26 = 16.62	FGHijkl	Mean	45 = 16.23 GHIJKL	LORETTA NOVA
Mean	27 = 16.99	DEFGHIJK	Mean	18 = 16.23 GHIJKL	TPR 96 C
Mean	28 = 18.77	BC	Mean	42 = 16.19 HIJKL	LYNX
Mean	29 = 15.59	KLMNO	Mean	4 = 15.90 IJKLNN	BRIGHTSTAR
Mean	30 = 13.36	P	Mean	46 = 15.87 IJKLNN	TPR 96 P
Mean	31 = 15.72	JJKLMNO	Mean	2 = 15.81 IJKLMN	ADVANTAGE
Mean	32 = 14.25	NOP	Mean	25 = 15.74 JKLMNO	PANTHER
Mean	33 = 14.47	NOP	Mean	31 = 15.72 JKLMNO	LP O-93
Mean	34 = 15.11	LKNO	Mean	12 = 15.66 JKLMNO	
Mean	35 = 16.97	DEFGHIJK	Mean	13 = 15.62 KLMNO	HEADSTART
Mean	36 = 15.47	KLMNO	Mean	29 = 15.59 KLMNO	RACER
Mean	37 = 17.90	BCDEFG	Mean	7 = 15.57 KLMNO	CUTTER
Mean	38 = 18.55	BCD	Mean	36 = 15.47 KLMNO	PR 97 EL2
"	39 = 17.45	CDEFGHI	Mean	43 = 15.39 KLMNO	TPR 96 A
Mean	40 = 14.05	OP	Mean	34 = 15.11 LMNO	SUNBRIGHT
Mean	41 = 18.32	BCDE	Mean	22 = 14.78 MNOP	
Mean	42 = 16.19	HIJKL	Mean	33 = 14.47 NOP	LP BB-93
Mean	43 = 15.39	KLMNO	Mean	24 = 14.27 NOP	PALMER II
Mean	44 = 16.98	DEFGHIJK	Mean	32 = 14.25 NOP	LP Q-93
Mean	45 = 16.23	GHIJKL	Mean	40 = 14.05 OP	SUNSHINE
Mean	46 = 15.87	IJKLNN	Mean	30 = 13.36 P	

200100241

Table 14A. Length of flag leaf sheath (cm) of perennial ryegr. Dandy II (Code No's. PR 97 DII) in 1998 compared with other cultivars transplanted in November 1997 to spaced plant plots near Corvallis, Oregon.

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP
 Randomized complete block design, three replications, Case Range: 139-184
 Variable 12: SHEATH LENGTH OF FLAG LEAF (CM). Function Range
 Error Mean Square = 0.2870 Error Degrees of Freedom = 90
 Observations to calculate mean = 3, Least Significant Difference Test
 LSD value = 0.8690 at alpha = 0.050

	Original Order		Ranked Order	LINE
Mean	1 = 10.19	DEFGHIJK	Mean 20 = 11.87 A	MAN.
Mean	2 = 8.893	OPQR	Mean 15 = 11.63 AB	LINN
Mean	3 = 10.24	DEFGHIJ	Mean 17 = 11.12 ABC	LONGGROW
Mean	4 = 9.633	GHIJKLMNOP	Mean 9 = 11.12 ABC	DERBY SUP
Mean	5 = 10.72	CDE	Mean 41 = 10.80 BCD	TARGET
Mean	6 = 9.644	FGHIJKLMNOP	Mean 5 = 10.72 CDE	CALYPSO II
Mean	7 = 9.603	Hijklmno	Mean 28 = 10.71 CDE	PRELUDE II
Mean	8 = 10.29	CDEFGHIJ	Mean 19 = 10.50 CDEF	MAGIC
Mean	9 = 11.12 ABC		Mean 23 = 10.48 CDEFG	MORN. STAR
Mean	10 = 10.40	CDEFGH	Mean 10 = 10.40 CDEFGH	SDGE
Mean	11 = 10.27	CDEFGHIJ	Mean 14 = 10.37 CDEFGH	JIPPIE
Mean	12 = 9.640	FGHIJKLMNOP	Mean 27 = 10.35 CDEFGHI	PINNACLE
Mean	13 = 9.593	Hijklmno	Mean 38 = 10.33 CDEFGHI	SATURN
"	14 = 10.37	CDEFGH	Mean 35 = 10.30 CDEFGHI	PR 97 DII = Dandy II
Mean	15 = 11.63 AB		Mean 8 = 10.29 CDEFGHIJ	DEL DWY
Mean	16 = 9.207	MNOPQ	Mean 11 = 10.27 CDEFGHIJ	ELF
Mean	17 = 11.12 ABC		Mean 3 = 10.24 DEFGHIJ	BLAZER III
Mean	18 = 9.703	FGHIJKLMNOP	Mean 21 = 10.24 DEFGHIJ	MAN II
Mean	19 = 10.50 CDEF		Mean 39 = 10.21 DEFGHIJK	SHERWOOD
Mean	20 = 11.87 A		Mean 1 = 10.19 DEFGHIJK	ACHIEVER
Mean	21 = 10.24 DEFGHIJ		Mean 37 = 10.14 DEFGHIJKL	RIV II
Mean	22 = 9.783	FGHIJKLMNOP	Mean 26 = 10.10 DEFGHIJKL	PENNFINE
Mean	23 = 10.48 CDEFG		Mean 44 = 10.08 DEFGHIJKL	TPR 96 B
Mean	24 = 8.443	QR	Mean 45 = 9.995 DEFGHIJKL	TPR 96 C
Mean	25 = 9.927	EFGHIJKLM	Mean 25 = 9.927 EFGHIJKLM	PANTHER
Mean	26 = 10.10 DEFGHIJKL		Mean 22 = 9.783 FGHIJKLMN	
Mean	27 = 10.35 CDEFGHI		Mean 18 = 9.703 FGHIJKLMNO	LYNX
Mean	28 = 10.71 CDE	IJKLMNOP	Mean 6 = 9.644 FGHIJKLMNO	CIT II
Mean	29 = 9.483		Mean 46 = 9.640 FGHIJKLMNO	TPR 96 P
Mean	30 = 8.267	R	Mean 12 = 9.640 FGHIJKLMNO	
Mean	31 = 9.057	NOPQR	Mean 4 = 9.633 GHIJKLMNO	BRIGHTSTAR
Mean	32 = 8.590	PQR	Mean 7 = 9.603 HIJKLMNOP	CUTTER
Mean	33 = 8.607	PQR	Mean 43 = 9.603 HIJKLMNOP	TPR 96 A
Mean	34 = 9.280	LNMOPQ	Mean 13 = 9.593 HIJKLMNOP	HEADSTART
Mean	35 = 10.30 CD8FGHI		Mean 29 = 9.483 IJKLMNO	RACER
Mean	36 = 9.343 KLMNOP		Mean 42 = 9.427 JKLMNOP	
Mean	37 = 10.14 DEFGHIJKL		Mean 36 = 9.343 KLMNOP	PR 97 EL2
Mean	38 = 10.33 CDEFGHI		Mean 34 = 9.280 LMNOPQ	SUNBRIGHT
"	39 = 10.21 DEFGHIJK		Mean 16 = 9.207 MNOPQ	LORETTA NOVA
Mean	40 = 8.843 OPQR		Mean 31 = 9.057 NOPQR	LP 0-93
Mean	41 = 10.80 BCD		Mean 2 = 8.893 OPQR	ADVANTAGE
Mean	42 = 9.427 JKLMNOP		Mean 40 = 8.843 OPQR	SUNSHINE
Mean	43 = 9.603 HIJKLMNOP		Mean 33 = 8.607 PQR	LP BB-93
Mean	44 = 10.08 DEFGHIJKL		Mean 32 = 8.590 PQR	LP Q-93
Mean	45 = 9.995 DEFGHIJKLM		Mean 24 = 8.443 QR	PALMER II
Mean	46 = 9.640 FGHIJKLMNO		Mean 30 = 8.267 R	

20010024

Table 15A. Color of the spike of perennial ryegrass cv. Dandy II
 Code No's. PR 97 DII) in 1998 compared with other cultivars trans-
 planted in November 1997 to spaced plant plots near Corvallis, Oregon

ef. Pickseed West, Inc. Research Facility, Data File 98PRPVP
 Randomized complete block design, three replications, Case Range 139-184
 Variable 11: SPIKE COLOR GREEN=1, PURPLE=2
 Error Mean Square = 0.02500, Error Degrees of Freedom = 90
 Observations to calculate mean = 3, Least Significant Difference Test
 SD value = 0.2565 at alpha = 0.050

	Original Order		Ranked Order	LINE	PERCENT
					Purple Green
Mean	1 = 1.633 ABCDEFGHI		Mean 21 = 1.833 A	MAN II	
Mean	2 = 1.433 GHIJK		Mean 25 = 1.800 A3	P3NN7INE	
Mean	3 = 1.783 ABC		Mean 38 = 1.783 A3C	SATURN	
Mean	4 = 1.517 DEFGBHIJK		Mean 3 = 1.783 ABC	BLAZER III	
Mean	5 = 1.750 ABCD8		Mean 8 = 1.767 ABCD	DIG DWY	
Mean	6 = 1.617 ABCDEFGHIJ		Mean 15 = 1.750 ABCDE	LINN	
Mean	7 = 1.650 ABCD8FGH		Mean 20 = 1.750 ABCDE	MAN	
Mean	8 = 1.767 ABCD		Mean 41 = 1.750 ABCDE	TARGET	75 25
Mean	9 = 1.400 HIJK		Mean 5 = 1.750 ABCDE	CALYPSO II	
Mean	10 = 1.700 ABCDE7		Mean 10 = 1.750 ABCDE	LP 88-91	
Mean	11 = 1.650 ABCD8FGH		Mean 37 = 1.750 ABCDZ	BIV II	
Mean	12 = 1.450 FGHIJK		Mean 10 = 1.700 ABCD8F	EDGZ	
Mean	13 = 1.633 ABCDEFGHI		Mean 25 = 1.667 ABCD8FG	PANTHER	
"	14 = 1.650 ABCD8FGH		Mean 34 = 1.650 ABCD8FGH	SUNBRIGHT	
Mean	15 = 1.750 ABCDZ		Mean 7 = 1.650 ABCD8FGH	CUTTER	
Mean	16 = 1.317 K		Mean 23 = 1.650 ABCD8FGH	MORN. STAR	
Mean	17 = 1.617 ABCD8FGHIJ		Mean 11 = 1.650 ABCD8FGH	EL?	65 35
Mean	18 = 1.633 ABCDEFGHI		Mean 19 = 1.650 ABCD8FGH	MAGIC	65 35
Mean	19 = 1.650 ABCDEFGH		Mean 14 = 1.650 ABCD8FGH	JIFFIE	
Mean	20 = 1.750 ABCD8		Mean 13 = 1.633 ABCD8FGH	HEADSTART	
Mean	21 = 1.833 A		Mean 30 = 1.633 ABCD8FGH		
Mean	22 = 1.383 IJK		Mean 39 = 1.633 ABCD8FGH	GREENWOOD	
Mean	23 = 1.650 ABCD8FGH		Mean 1 = 1.633 ABCD8FGH	ACHIEVER	
Mean	24 = 1.433 GHIJK		Mean 18 = 1.633 ABCD8FGH	LYRA	
Mean	25 = 1.667 ABCD8FG		Mean 44 = 1.633 ABCD8FGH	TPI 96 B	63 37
Mean	26 = 1.800 A3		Mean 17 = 1.617 ABCDEFGHIJ	LONGBOW	
Mean	27 = 1.567 BCDEFGHIJK		Mean 6 = 1.617 ABCD8FGHIJ	CIT II	
Mean	28 = 1.533 CDEFGBHIJK		Mean 35 = 1.617 ABCD8FGHIJ	PR 97 DII = Dandy II	62 38
Mean	29 = 1.500 EFGHIJK		Mean 27 = 1.567 BCDE8FGHIJK	PINNACLE	
Mean	30 = 1.633 ABCDEFGHI		Mean 43 = 1.550 BCDE8FGHIJK	TPI 96 A	55 45
Mean	31 = 1.517 DEFGHIJK		Mean 42 = 1.533 CDE8FGHIJK	PILOWS II	
Mean	32 = 1.500 EFGHIJK		Mean 28 = 1.533 CDE8FGHIJK	LP 0-93	
Mean	33 = 1.750 ABCDE		Mean 31 = 1.517 DEFGHIJK	BRIGHTSTAR	
Mean	34 = 1.650 ABCD8FGH		Mean 4 = 1.517 DEFGHIJK	RACER	
Mean	35 = 1.617 ABCD8FGHIJ		Mean 29 = 1.500 EFGHIJK	TPI 96 C	50 50
Mean	36 = 1.417 GHIJK		Mean 45 = 1.500 EFGHIJK	LP Q-93	
Mean	37 = 1.750 ABCDZ		Mean 32 = 1.500 EFGHIJK		
Mean	38 = 1.783 ABC		Mean 12 = 1.450 EFGHIJK	TPI 96 P	43 57
"	39 = 1.633 ABCD8FGH		Mean 46 = 1.433 EFGHIJK	PALMER II	
Mean	40 = 1.357 JK		Mean 24 = 1.433 EFGHIJK	ADVANTAGE	
Mean	41 = 1.750 ABCD8		Mean 2 = 1.433 EFGHIJK	P3 97 EL2	42 58
Mean	42 = 1.533 CDEFGBHIJK		Mean 35 = 1.417 EFGHIJK	DEBBY SUP	
Mean	43 = 1.550 BCDE8FGHIJK		Mean 9 = 1.400 EFGHIJK	IJK	
Mean	44 = 1.633 ABCD8FGH		Mean 22 = 1.383 EFGHIJK	SUNSHINE	
Mean	45 = 1.500 EFGHIJK		Mean 40 = 1.367 EFGHIJK	LORETTA NOVA	
24.	Mean 46 = 1.433 GHIJK		Mean 16 = 1.317 EFGHIJK	K	

200100241

Table 16A. Seed width (MM) of perennial ryegrass cv. Dandy II
 (Code No's. PR 97 DII) in 1998 compared with other cultivars trans-
 planted in November 1997 to spaced plant plots near Corvallis, Oregon.

Ref. Pickseed West, Inc. Research Facility, Data file 98PRPVP
 Randomized complete block design, three replications, Case Range 139-184

Variable 22: 10 SEED WIDTH (MM)

Error Mean Square = 0.4710 Error Degrees of Freedom = 90

Observations to calculate mean = 3, Least Significant Difference Test

LSD value = 1.113 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 12.67	CDEF	Mean	15 = 14.67 A	LINA
Mean	2 = 12.83	CDE	Mean	26 = 14.00 AB	PENNPIKE
Mean	3 = 12.33	D ² F	Mean	17 = 13.50 BC	LOWGROW
Mean	4 = 12.17	DEF	Mean	46 = 13.17 BCD	TPR 96 P
Mean	5 = 13.17	BCD	Mean	5 = 13.17 BCD	CALYPSO II
Mean	6 = 13.17	BCD	Mean	23 = 13.17 BCD	MORN. STAR
Mean	7 = 12.83	CDE	Mean	6 = 13.17 BCD	CIT II
Mean	8 = 13.17	BCD	Mean	8 = 13.17 BCD	DEL DWF
Mean	9 = 13.00	BCDE	Mean	14 = 13.17 BCD	JIFFIE
Mean	10 = 12.67	CDEF	Mean	21 = 13.00 BCDE	MAN II
Mean	11 = 12.50	CDEF	Mean	39 = 13.00 BCDE	SHERWOOD
Mean	12 = 12.00	E ² F	Mean	18 = 13.00 BCDE	LYNX
Mean	13 = 11.67	E ² F	Mean	37 = 13.00 BCDE	RIV II
Mean	14 = 13.17	BCD	Mean	9 = 13.00 BCDE	DERBY SUP
Mean	15 = 14.67		Mean	41 = 13.00 BCDE	TARGET
Mean	16 = 12.00	E ² F	Mean	7 = 12.83 CDE	CUTTER
Mean	17 = 13.50	BC	Mean	2 = 12.83 CDE	ADVANTAGE
Mean	18 = 13.00	BCDE	Mean	31 = 12.83 CDE	LP 0-93
Mean	19 = 12.67	CDEF	Mean	24 = 12.83 CDE	PALMER II
Mean	20 = 12.50	CDEF	Mean	33 = 12.67 CDEF	LP BB-93
Mean	21 = 13.00	BCDE	Mean	10 = 12.67 CDEF	EDGE
Mean	22 = 12.00	E ² F	Mean	36 = 12.67 CDEF	PR 97 EL2
Mean	23 = 13.17	BCD	Mean	19 = 12.67 CDEF	MAGIC
Mean	24 = 12.83	CDE	Mean	43 = 12.67 CDEF	TPR 96 A
Mean	25 = 12.50	CDEF	Mean	1 = 12.67 CDEF	ACHIEVER
Mean	26 = 14.00	AB	Mean	28 = 12.50 CDEF	PRELUDE II
Mean	27 = 12.50	CDEF	Mean	32 = 12.50 CDEF	LP Q-93
Mean	28 = 12.50	CDEF	Mean	11 = 12.50 CDEF	ELF
Mean	29 = 12.17	DEF	Mean	27 = 12.50 CDEF	PINNACLE
Mean	30 = 12.33	DEF	Mean	45 = 12.50 CDEF	TPR 96 C
Mean	31 = 12.83	CDE	Mean	20 = 12.50 CDEF	MAN.
Mean	32 = 12.50	CDEF	Mean	25 = 12.50 CDEF	PANTHER
Mean	33 = 12.67	CDEF	Mean	38 = 12.33 DEF	SATURN
Mean	34 = 12.00	E ² F	Mean	44 = 12.33 DEF	TPR 96 B
Mean	35 = 12.33	DEF	Mean	40 = 12.33 DEF	SUNSHINE
Mean	36 = 12.67	CDEF	Mean	30 = 12.33 DEF	
Mean	37 = 13.00	BCDE	Mean	3 = 12.33 DEF	BLAZER III
Mean	38 = 12.33	DEF	Mean	35 = 12.33 DEF	PR 97 DII = Dandy II
Mean	39 = 13.00	BCDE	Mean	42 = 12.33 DEF	BRIGHTSTAR
Mean	40 = 12.33	DEF	Mean	4 = 12.17 DEF	RACER
Mean	41 = 13.00	BCDE	Mean	29 = 12.17 DEF	SUNBRIGHT
Mean	42 = 12.33	DEF	Mean	34 = 12.00 EF	
Mean	43 = 12.67	CDEF	Mean	12 = 12.00 EF	
Mean	44 = 12.33	DEF	Mean	16 = 12.00 EF	LORETTA NOVA
Mean	45 = 12.50	CDEF	Mean	22 = 12.00 EF	
Mean	46 = 13.17	BCD	Mean	13 = 11.67 F	HEADSTART

200100241

Table 17A. Seed length (MM) of perennial ryegrass cv. Dandy II
 (Code No's. PR 97 DII) in 1998 compared with other cultivars trans-
 planted in November 1997 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP
 Randomized complete block design, three replications, Case Range 139-184

Variable 23: TEN SEED LENGTH (MM)

Error Mean Square = 0.05200 Error Degrees of Freedom - 90

Observations to calculate mean = 3, Least Significant Difference Test

LSD value = 0.3699 at alpha = 0.050

	Original Order		Ranked Order	LINE
Mean	1 = 6.250 A		Mean 1 = 6.250 A	ACHIEVER
Mean	2 = 5.733 CDEFGHIJ		Mean 15 = 6.217 AB	LINN
Mean	3 = 5.730 CDEFGR		Mean 26 = 6.077 ABC	PENNFINE
Mean	4 = 5.717 CDEFGHIJ		Mean 19 = 6.060 ABC	MAGIC
Mean	5 = 5.933 ABCD		Mean 6 = 6.050 ABC	CIT II
Mean	6 = 6.050 ABC		Mean 21 = 6.010 ABCD	MAR. II
Mean	7 = 5.333 JKLM		Mean 5 = 5.993 ABCD	CALYPSO II
Mean	8 = 5.670 DEFGHIJKL		Mean 10 = 5.960 ABCDE	EDGE
Mean	9 = 5.650 DEFGHIJKL		Mean 14 = 5.950 ABCDE	JIFFIE
Mean	10 = 5.960 ABCDE		Mean 35 = 5.890 ABCDEF	PR 97 DII = Dandy II
Mean	11 = 5.957 BCDEPG		Mean 17 = 5.877 BCDEF	LONGBOW
Mean	12 = 5.327 LM		Mean 11 = 5.867 BCDEFG	ELF
"	13 = 5.660 DEFGHIJKL		Mean 23 = 5.860 BCDEFG	HORN. STAR
"	14 = 5.950 ABCDE		Mean 28 = 5.853 BCDEFG	PRELUDE II
Mean	15 = 6.217 AB		Mean 37 = 5.850 BCDEPG	RIV II
Mean	16 = 4.923 H		Mean 39 = 5.850 BCDEFG	SHERWOOD
Mean	17 = 5.377 BCDEF		Mean 20 = 5.840 CDEFG	MAR.
Mean	18 = 5.600 EFGHIJKLM		Mean 46 = 5.833 CDEFG	TPR 96 P
Mean	19 = 6.080 ABC		Mean 3 = 5.790 CDEFGH	BLAZER III
Mean	20 = 5.910 CDEFG		Mean 31 = 5.783 CDEFGH	LP 0-93
Mean	21 = 6.610 ABCD		Mean 43 = 5.767 CDEFGHI	TPR 96 A
Mean	22 = 5.500 GHIJKLM		Mean 38 = 5.760 CDEFGHI	SATURN
Mean	23 = 5.850 BCDEPG		Mean 2 = 5.733 CDEFGHIJ	ADVANTAGE
Mean	24 = 5.527 FGHIJKLM		Mean 27 = 5.720 CDEFGHIJ	PINNACLE
Mean	25 = 5.440 HIJKLM		Mean 4 = 5.717 CDEFGHIJ	BRIGHTSTAR
Mean	26 = 6.077 ABC		Mean 29 = 5.710 CDEFGHIJK	RACER
Mean	27 = 5.720 CDEFGHIJ		Mean 41 = 5.670 DEFGHIJKL	TARGET
Mean	28 = 5.853 BCDEFG		Mean 8 = 5.670 DEFGHIJKL	DEL DWY
Mean	29 = 5.710 CDEFGHIJK		Mean 13 = 5.660 DEFGHIJKL	HEADSTART
Mean	30 = 5.367 JKLM		Mean 9 = 5.650 DEFGHIJKL	DERBY SUP
Mean	31 = 5.733 CDEFGH		Mean 45 = 5.610 EFGHIJKLM	TPR 96 C
Mean	32 = 5.603 EFGHIJKLM		Mean 32 = 5.603 EFGHIJKLM	LP Q-93
Mean	33 = 5.463 HIJKLM		Mean 18 = 5.600 EFGHIJKLM	LYNX
Mean	34 = 5.250 MN		Mean 40 = 5.560 FGHIJKLM	SUNSHINE
Mean	35 = 5.850 ABCDEF		Mean 44 = 5.560 FGHIJKLM	TPR 96 B
Mean	36 = 5.343 KL		Mean 24 = 5.527 FGHIJKLM	PALMER II
Mean	37 = 5.650 BCDEFG		Mean 22 = 5.500 GHIJKLM	
"	33 = 5.750 CDEFGHI		Mean 33 = 5.453 HIJKLM	LP BB-93
"	39 = 5.850 BCDEFG		Mean 25 = 5.440 HIJKLM	PANTHER
"	40 = 5.550 FGHIJKLM		Mean 42 = 5.400 IJKLM	
Mean	41 = 5.670 DEFGHIJKL		Mean 7 = 5.383 JKLK	CUTTER
Mean	42 = 5.400 IJKLM		Mean 30 = 5.367 JKLK	
Mean	43 = 5.767 CDEFGHI		Mean 36 = 5.343 KLM	PR 97 EL2
Mean	44 = 5.510 FGHIJKLM		Mean 12 = 5.327 LM	
Mean	45 = 5.610 EFGHIJKLM		Mean 34 = 5.260 MN	SUNBRIGHT

200/00241

Table 19A. 1998 weight 1000 seed of perennial ryegr. cv. Dandy II
 (Code No's. PR 97 DII) compared with other cultivars transplanted
 in November 1997 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data file 98PRPVP
 Randomized complete block design, three replications, Case Range 139-184
 Variable 4: 1000 SEED WEIGHT (G)
 Error Mean Square = 0.03900 Error degrees of Freedom = 90
 Observations to calculate mean = 3, Least Significant Difference Test
 LSD value = 0.3203 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 1.580	BCDEFG	Mean 15 = 1.953	A	LINN
Mean	2 = 1.407	DEFGHIJK	Mean 22 = 1.800	AB	DERRI SUPREME
Mean	3 = 1.393	DEFGHIJK	Mean 9 = 1.787	AB	TPR 96 A
Mean	4 = 1.280	GHIJKL	Mean 43 = 1.787	AB	TPR 96 P
Mean	5 = 1.587	BCDEFG	Mean 46 = 1.773	ABC	PENNPIKE
Mean	6 = 1.520	BCDEFGH	Mean 26 = 1.713	ABCD	LP 0-93
Mean	7 = 1.567	BCDEFG	Mean 31 = 1.693	ABCD	SHERWOOD
Mean	8 = 1.560	BCDEFG	Mean 39 = 1.687	ABCD	RACER
Mean	9 = 1.787	AB	Mean 29 = 1.633	ABCDE	MANHATTAN II
Mean	10 = 1.587	BCDEFG	Mean 42 = 1.633	ABCDE	PR 97 DII = Dandy II
Mean	11 = 1.580	BCDEFG	Mean 21 = 1.620	BCDEF	EDGE
Mean	12 = 1.453	CDEFGHI	Mean 35 = 1.613	BCDEF	CALYPSO II
Mean	13 = 1.353	EFGHIJK	Mean 10 = 1.587	BCDEFG	ELF
"	14 = 1.453	CDEFGHI	Mean 5 = 1.587	BCDEPG	TPR 96 C
Mean	15 = 1.953	A	Mean 11 = 1.580	BCDEFG	ACHIEVER
Mean	16 = 1.027	L	Mean 45 = 1.580	BCDEFG	LYNX
Mean	17 = 1.173	IJKL	Mean 1 = 1.580	BCDEFG	CUTTER
Mean	18 = 1.573	BCDEFG	Mean 18 = 1.573	BCDEFG	TPR 96 B
Mean	19 = 1.233	HJKL	Mean 7 = 1.567	BCDEFG	DEL. DWF
Mean	20 = 1.100	KL	Mean 44 = 1.567	BCDEFG	CITATION II
Mean	21 = 1.620	BCDEF	Mean 8 = 1.560	BCDEFG	SUNSHINE
Mean	22 = 1.800	AB	Mean 6 = 1.520	BCDEFGH	PRELUDE II
Mean	23 = 1.333	EFGHIJKL	Mean 40 = 1.520	BCDEFGH	PALMER II
Mean	24 = 1.480	BCDEFGHI	Mean 28 = 1.513	BCDEFGH	JIFFIE
Mean	25 = 1.213	HJKL	Mean 24 = 1.480	BCDEFGHI	RIVIERA II
Mean	26 = 1.713	ABCD	Mean 12 = 1.453	CDEFGHI	LP Q-93
Mean	27 = 1.360	EFGHIJK	Mean 14 = 1.453	CDEFGHI	ADVANTAGE
Mean	28 = 1.513	BCDEFGH	Mean 37 = 1.427	DEFGHIJ	BLAZER III
Mean	29 = 1.633	ABCDE	Mean 32 = 1.427	DEFGHIJ	PINNACLE
Mean	30 = 1.400	DEFGHIJK	Mean 2 = 1.407	DEFGHIJK	HEADSTART
Mean	31 = 1.693	ABCD	Mean 30 = 1.400	DEFGHIJK	MORNING STAR
Mean	32 = 1.427	DEFGHIJ	Mean 3 = 1.393	DEFGHIJK	SATURN
Mean	33 = 1.300	FGHJKL	Mean 27 = 1.360	EFGHIJK	LP BB-93
Mean	34 = 1.113	JKL	Mean 13 = 1.353	EFGHIJK	BRIGHTSTAR
Mean	35 = 1.613	BCDEF	Mean 23 = 1.333	EFGHIJKL	PR 97 DL2
Mean	36 = 1.280	GHIJKL	Mean 38 = 1.327	EFGHIJKL	TARGET
Mean	37 = 1.427	DEFGHIJ	Mean 33 = 1.300	EFGHIJKL	MAGIC
Mean	38 = 1.327	EFGHIJKL	Mean 4 = 1.280	GRIJKL	PANTHER
"	39 = 1.687	ABCD	Mean 36 = 1.280	GRIJKL	LOWGROW
Mean	40 = 1.520	BCDEFGH	Mean 41 = 1.267	GHIJKL	SUNBRIGHT
Mean	41 = 1.267	GHIJKL	Mean 19 = 1.233	HJKL	MANHATTAN
Mean	42 = 1.633	ABCDE	Mean 25 = 1.213	IJKL	LORETTA NOVA
Mean	43 = 1.787	AB	Mean 17 = 1.173		
Mean	44 = 1.567	BCDEFG	Mean 34 = 1.113		
Mean	45 = 1.580	BCDEFG	Mean 20 = 1.100		
Mean	46 = 1.773	ABC	Mean 16 = 1.027	L	

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Table 20A Flag leaf posture at boot stage of perennial ryegr. Dandy II
 (Code names PR 97 DII) in 1998 compared to other cultivars trans-
 planted November 1997 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP
 Randomized complete block design, three replications, Case Range 139-184
 Variable 21: FLAG LEAF AT BOOT STAGE: 1=DEFLEXED, 3=RECURVED,
 5=HORIZONTAL, 7=SEMIERECT, 9=ERECT

Error Mean Square = 0.1660 Error Degrees of Freedom = 90
 Observations to calculate mean = 3, Least Significant Difference Test
 LSD value = 0.6609 at alpha = 0.050

	Original Order	Ranked Order	LINEx
Mean	1 = 7.127 AB	Mean 24 = 7.207 A	PALMER II
Mean	2 = 6.260 G	Mean 1 = 7.127 A3	ACHIEVER
Mean	3 = 6.357 D37G	Mean 34 = 7.080 ABC	SUNBRIGHT
Mean	4 = 7.000 ABCD3	Mean 9 = 7.027 ABCD	D33BY SUP
Mean	5 = 6.837 ABCDEFG	Mean 15 = 7.000 ABCD3	LIMA
Mean	6 = 6.930 ABCDEF	Mean 7 = 7.000 ABCD3	CUTTER
Mean	7 = 7.600 ABCD3	Mean 4 = 7.000 ABCD3	BRIGHTSTAR
Mean	8 = 6.853 ABCDEFG	Mean 26 = 6.997 ABCD7	PENNPIKE
Mean	9 = 7.027 ABCD	Mean 29 = 6.950 ABCD7	RACER
Mean	10 = 6.753 ABCDEFG	Mean 27 = 6.937 ABCD7	PINKACLE
Mean	11 = 5.680 ABCDEFG	Mean 6 = 6.910 ABCD7	CIT II
Mean	12 = 6.240 G	Mean 14 = 6.853 ABCD7	JIFFIS
Mean	13 = 6.717 ABCDEFG	Mean 8 = 6.853 ABCD7	DEL DWY
"	14 = 6.853 ABCDEFG	Mean 35 = 6.843 ABCD7	PR 97 DII = Dandy II
Mean	15 = 7.000 ABCD3	Mean 5 = 6.837 ABCDEFG	CALYPSO II
Mean	16 = 6.417 DEFG	Mean 23 = 6.817 ABCDEFG	MORN. STAR
Mean	17 = 6.217 G	Mean 22 = 6.787 ABCDEFG	
Mean	18 = 6.557 ABCD7	Mean 42 = 6.783 ABCDEFG	PRELUDE II
Mean	19 = 6.397 DEFG	Mean 28 = 6.770 ABCD7	EDGE
Mean	20 = 5.330 H	Mean 10 = 6.753 ABCD7	MAN II
Mean	21 = 6.727 ABCDEFG	Mean 21 = 6.727 ABCDEFG	HEADSTART
Mean	22 = 6.787 ABCDEFG	Mean 13 = 6.717 ABCDEFG	SHERWOOD
Mean	23 = 6.617 ABCD7	Mean 39 = 6.687 ABCD7	ELF
Mean	24 = 7.207 A	Mean 11 = 6.680 ABCD7	LP 0-93
Mean	25 = 6.337 FG	Mean 31 = 6.667 ABCDEFG	LP BB-93
Mean	26 = 6.997 ABCD7	Mean 33 = 6.640 ABCDEFG	
Mean	27 = 6.937 ABCD7	Mean 30 = 6.633 ABCDEFG	SUNSHINE
Mean	28 = 6.770 ABCDEFG	Mean 40 = 6.610 ABCDEFG	TPR 96 C
Mean	29 = 6.950 ABCD7	Mean 45 = 6.593 ABCDEFG	TPR 96 A
Mean	30 = 6.633 ABCDEFG	Mean 43 = 6.563 ABCDEFG	LYNX
Mean	31 = 6.667 ABCDEFG	Mean 18 = 6.557 ABCD7	TARGET
Mean	32 = 6.480 BCDEFG	Mean 44 = 6.547 ABCD7	TPR 96 B
Mean	33 = 6.640 ABCDEFG	Mean 41 = 6.533 BCDEFG	TPR 96 P
Mean	34 = 7.020 ABC	Mean 46 = 6.530 BCDEFG	LP Q-93
Mean	35 = 6.843 ABCDEFG	Mean 32 = 6.480 BCDEFG	RIV II
Mean	36 = 6.390 DEFG	Mean 37 = 6.440 BCDEFG	LORETTA NOVA
Mean	37 = 6.440 CDEFG	Mean 16 = 6.417 BCDEFG	MAGIC
Mean	38 = 6.363 EFG	Mean 19 = 6.397 BCDEFG	PR 97 EL2
"	39 = 6.687 ABCDEFG	Mean 36 = 6.390 BCDEFG	BLAZER III
"	40 = 6.619 ABCDEFG	Mean 43 = 6.367 BCDEFG	SATURN
Mean	41 = 6.533 BCDEFG	Mean 38 = 6.363 BCDEFG	PANTHER
Mean	42 = 6.783 ABCDEFG	Mean 25 = 6.337 BCDEFG	ADVANTAGE
Mean	43 = 6.563 ABCDEFG	Mean 2 = 6.260 BCDEFG	
Mean	44 = 6.547 ABCDEFG	Mean 12 = 6.240 BCDEFG	Lowgrow
28.	Mean 45 = 6.593 ABCDEFG	Mean 17 = 6.217 BCDEFG	
"	46 = 6.530 BCDEFG	Mean 20 = 5.330 H	Manhattan

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Table 21A Anther date (Julian) during 1998 of perennial ryegr. Dandy II
 (code names PR 97 DII compared to other cultivars transplanted
 November 1997 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 98PRPVP

Variable 20: ANTER DATE (JULIAN)

Randomized complete block design, three replications, Case Range 139-184

Error Mean Square = 1.590 Error Degrees of Freedom = 90

Observations to calculate mean = 3, Least Significant Difference Test

LSD value = 2.045 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 155.3	CDEF	Mean	16 = 163.7	A
Mean	2 = 155.3	CDEF	Mean	25 = 158.0	B
Mean	3 = 154.0	EFGH	Mean	23 = 158.0	B
Mean	4 = 156.0	BCDE	Mean	11 = 157.3	BC
Mean	5 = 152.0	HI	Mean	20 = 156.7	BCD
Mean	6 = 152.7	GHI	Mean	45 = 156.0	BCDE
Mean	7 = 153.3	FGHI	Mean	4 = 156.0	BCDE
Mean	8 = 155.3	CDEF	Mean	10 = 156.0	BCD3
Mean	9 = 154.0	EFGH	Mean	2 = 155.3	CDEF?
Mean	10 = 156.0	BCDE	Mean	3 = 155.3	CDEF?
Mean	11 = 157.3	BC	Mean	17 = 155.3	CDEF?
Mean	12 = 154.7	DEFG	Mean	1 = 155.3	CDEF?
Mean	13 = 154.0	EFGH	Mean	43 = 155.3	CDEF?
Mean	14 = 154.0	EFGH	Mean	27 = 155.3	CDEF?
Mean	15 = 146.7	K	Mean	12 = 154.7	DEFG
Mean	16 = 163.7	A	Mean	37 = 154.7	DEFG
Mean	17 = 155.3	CDEF	Mean	40 = 154.7	DEFG
Mean	18 = 152.7	GHI	Mean	19 = 154.7	DEFG
Mean	19 = 154.7	DEFG	Mean	13 = 154.0	EFGH
Mean	20 = 156.7	BCD	Mean	9 = 154.0	EFGH
Mean	21 = 153.3	FGHI	Mean	38 = 154.0	EFGH
Mean	22 = 154.0	EFGH	Mean	39 = 154.0	EFGH
Mean	23 = 158.0	B	Mean	41 = 154.0	EFGH
Mean	24 = 153.3	FGHI	Mean	46 = 154.0	EFGH
Mean	25 = 158.0	B	Mean	3 = 154.0	EFGH
Mean	26 = 149.3	J	Mean	14 = 154.0	EFGH
Mean	27 = 155.3	CDEF	Mean	28 = 154.0	EFGH
Mean	28 = 154.0	EFGH	Mean	44 = 154.0	EFGH
Mean	29 = 152.7	GHI	Mean	22 = 154.0	EFGH
Mean	30 = 151.3	IJ	Mean	36 = 154.0	EFGH
Mean	31 = 154.0	EFGH	Mean	31 = 154.0	EFGH
Mean	32 = 151.3	IJ	Mean	42 = 154.0	EFGH
Mean	33 = 153.3	FGHI	Mean	33 = 153.3	FGHI
Mean	34 = 153.3	FGHI	Mean	24 = 153.3	FGHI
Mean	35 = 151.3	IJ	Mean	34 = 153.3	FGHI
Mean	36 = 154.0	EFGH	Mean	7 = 153.3	FGHI
Mean	37 = 154.7	DEFG	Mean	21 = 153.3	FGHI
Mean	38 = 154.0	EFGH	Mean	18 = 152.7	GHI
Mean	39 = 154.0	EFGH	Mean	6 = 152.7	GHI
Mean	40 = 154.7	DEFG	Mean	29 = 152.7	GHI
Mean	41 = 154.0	EFGH	Mean	5 = 152.0	HI
Mean	42 = 154.0	EFGH	Mean	32 = 151.3	IJ
Mean	43 = 155.3	CDEF	Mean	30 = 151.3	IJ
Mean	44 = 154.0	EFGH	Mean	35 = 151.3	IJ
Mean	45 = 156.0	BCDE	Mean	26 = 149.3	J
Mean	46 = 154.0	EFGH	Mean	15 = 146.7	K

PR 97 DII = Dandy II = June 1
 PENNPINE = May 29
 LINN = May 26

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List of tables containing measurements of morphological and other characters of perennial ryegrass cultivars obtained during 1999 on plants that had been transplanted in fall 1998 in spaced plant plots near Corvallis, Oregon

Table 1B. Heading date in 1999

Table 2B. Growth habit, prostrate vs upright, 1999

Table 3B. Color, 1999

Table 4B. Percent rough vs smooth rachis, 1999

Table 5B. Flag leaf height (cm) 1999

Table 6B. Flag leaf width (mm) 1999

Table 7B. Flag leaf length (cm) 1999

Table 8B. Length of spikelet (mm) 1999

Table 9B. Outer glume length (mm) 1999

Table 10B. Number of florets/spikelets 1999

Table 11B. Number of spikelets/spike 1999

Table 12B. Plant height (cm) 1999

Table 13B. Length of spike (cm) 1999

Table 14B. Length of flag leaf sheath (cm) 1999

Table 15B. Color of spike 1999

Table 16B. Width of seed (mm) 1999

Table 17B. Length of seed (mm) 1999

Table 18B1. % anthocyanin in lower leaf sheath, 1st run 1999

Table 18B2. % anthocyanin in lower leaf sheath, 2nd run 1999

Table 19B. Weight of 1000 seed 1999

Table 20B. Flag leaf posture at boot stage 1999

Table 21B. Anther date (Julian) 1999

Table 22B. Anther color 1999

Table 23B. Growth habit 1999

All from Randomized complete block design, three replications

Table 1B. Heading date in 1999 of perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared to other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP
 Title: 1998 PLANTED - PR PVP TRIAL - 1999 YEAR DATA
 Case Range: 156-193 Variable 6: Heading Date (Julian)
 Error Mean Square = 4.383 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 3.406 at alpha = 0.050

	Original Order		Ranked Order	LINE	
Mean	1 = 137.4	KLM	Mean 20 = 150.4 A	MANHATTAN	May 30
Mean	2 = 143.2	BCDEFG	Mean 24 = 145.1 B	PANTHER	
Mean	3 = 144.5	BC	Mean 3 = 144.5 BC	BRIGHTSTAR	
Mean	4 = 140.3	FGHIJK	Mean 28 = 144.3 BCD	PR 97EL2	
Mean	5 = 138.5	IJK	Mean 17 = 144.2 BCDE		
Mean	6 = 141.2	CDEFGHIJ	Mean 38 = 143.6 BCDEF		
Mean	7 = 141.0	DEFGHIJ	Mean 15 = 143.6 BCDEFG		
Mean	8 = 140.4	FGHIJK	Mean 2 = 143.2 BCDEFG	ADVANTAGE	
Mean	9 = 141.1	DEFGHIJ	Mean 16 = 143.0 BCDEFG		
Mean	10 = 142.2	BCDEFGH	Mean 33 = 142.8 BCDEFG	TARGET	
Mean	11 = 139.3	HJK	Mean 37 = 142.5 BCDEFGH	TPR 96P	
Mean	12 = 142.0	BCDEFGH	Mean 22 = 142.4 BCDEFGH	MORNING STAR	
Mean	13 = 134.0	N	Mean 29 = 142.4 BCDEFGH	PR 97DII = Dandy II	
Mean	14 = 140.4	FGHIJK	Mean 36 = 142.3 BCDEFGH	TPR 96C	
Mean	15 = 143.6	BCDEFG	Mean 10 = 142.2 BCDEFGH		
Mean	16 = 143.0	BCDEFG	Mean 19 = 142.2 BCDEFGH	MAGIC	
Mean	17 = 144.2	BCDE	Mean 12 = 142.0 BCDEFGH	JIFFIE	
Mean	18 = 138.0	JKL	Mean 23 = 141.9 BCDEFGH	PALMER II	
Mean	19 = 142.2	BCDEFGH	Mean 21 = 141.7 CDEFGHI	MANHATTAN II	
Mean	20 = 150.4	A	Mean 27 = 141.6 CDEFGHI		
Mean	21 = 141.7	CDEFGHI	Mean 34 = 141.6 CDEFGHI	TPR 96A	
Mean	22 = 142.4	BCDEFGH	Mean 32 = 141.2 CDEFGHIJ	SUNSHINE	
Mean	23 = 141.9	BCDEFGH	Mean 6 = 141.2 CDEFGHIJ	CUTTER	
Mean	24 = 145.1	B	Mean 9 = 141.1 DEFGHIJ	ELF	
Mean	25 = 135.0	LM	Mean 7 = 141.0 DEFGHIJ	DELWARE DWARF	
Mean	26 = 140.9	EFGHIJ	Mean 26 = 140.9 EFGHIJ	PINNACLE	
Mean	27 = 141.6	CDEFGHI	Mean 30 = 140.8 EFGHIJ	RACER	
Mean	28 = 144.3	BCD	Mean 35 = 140.7 EFGHIJ	TPR 96B	
Mean	29 = 142.4	BCDEFGH	Mean 8 = 140.4 EFGHIJK	DERBY SUPREME	
Mean	30 = 140.8	FGHIJK	Mean 14 = 140.4 EFGHIJK		
Mean	31 = 140.2	GHIJK	Mean 4 = 140.3 EFGHIJK	CALYPSO II	
Mean	32 = 141.2	CDEFGHIJ	Mean 31 = 140.2 GHIJK	SATURN	
Mean	33 = 142.8	BCDEFG	Mean 11 = 139.3 HJK	HEADSTART	
Mean	34 = 141.6	CDEFGHI	Mean 5 = 138.5 IJK	CITATION II	
Mean	35 = 140.7	FGHIJK	Mean 18 = 138.0 JKL	LYNX	
Mean	36 = 142.3	BCDEFGH	Mean 1 = 137.4 KLM	ACHIEVER	
Mean	37 = 142.5	BCDEFGH	Mean 25 = 135.0 LH	PENNPIKE	
Mean	38 = 143.6	BCDEF	Mean 13 = 134.0 N	LINN	

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Table 2B. Mature growth habit in 1999 of perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP
 Title: 1998 PLANTED - PR PVP Trial - 1999 YEAR DATA

Case Range: 115-152

Variable 8: MATURE PLANT HABIT 1=PROSTRATE, 9=ERECT

Error Mean Square = 0.09500

Error Degrees of Freedom = 74

No. of observations to calculate a mean = 3

Least Significant Difference Test

LSD value = 0.5014 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 6.663 DEF		Mean 15 = 7.303 A		
Mean	2 = 6.970 ABCDE		Mean 14 = 7.223 AB		
Mean	3 = 6.617 DEFG		Mean 35 = 7.183 ABC		
Mean	4 = 6.723 BCDEF		Mean 29 = 7.110 ABCD		
Mean	5 = 6.753 BCDE		Mean 38 = 7.070 ABCDE		
Mean	6 = 6.777 BCDE		Mean 27 = 7.033 ABCDE		
Mean	7 = 6.570 EFG		Mean 18 = 7.030 ABCDE		
Mean	8 = 6.573 EFG		Mean 32 = 7.023 ABCDE		
Mean	9 = 7.013 ABCDE		Mean 9 = 7.013 ABCDE		
Mean	10 = 6.927 ABCDE		Mean 30 = 6.987 ABCDE		
Mean	11 = 6.970 ABCDE		Mean 2 = 6.970 ABCDE		
Mean	12 = 6.877 ABCDE		Mean 11 = 6.970 ABCDE		
Mean	13 = 6.737 BCDEF		Mean 37 = 6.957 ABCDE		
Mean	14 = 7.223 AB		Mean 10 = 6.927 ABCDE		
Mean	15 = 7.303 A		Mean 31 = 6.913 ABCDE		
Mean	16 = 6.243 FGH		Mean 34 = 6.907 ABCDE		
Mean	17 = 6.747 BCDE		Mean 28 = 6.887 ABCDE		
Mean	18 = 7.030 ABCDE		Mean 26 = 6.883 ABCDE		
Mean	19 = 6.857 ABCDE		Mean 12 = 6.877 ABCDE		
Mean	20 = 6.037 H		Mean 36 = 6.870 ABCDE		
Mean	21 = 6.763 BCDE		Mean 19 = 6.857 ABCDE		
Mean	22 = 6.837 ABCDE		Mean 22 = 6.837 ABCDE		
Mean	23 = 6.693 CDEF		Mean 24 = 6.833 ABCDE		
Mean	24 = 6.833 ABCDE		Mean 6 = 6.777 BCDE		
Mean	25 = 6.143 GH		Mean 21 = 6.763 BCDE		
Mean	26 = 6.883 ABCDE		Mean 5 = 6.753 BCDE		
Mean	27 = 7.033 ABCDE		Mean 17 = 6.747 BCDE		
Mean	28 = 6.887 ABCDE		Mean 13 = 6.737 BCDEF		
Mean	29 = 7.110 ABCD		Mean 4 = 6.723 BCDEF		
Mean	30 = 6.987 ABCDE		Mean 23 = 6.693 CDEF		
Mean	31 = 6.913 ABCDE		Mean 33 = 6.680 DEF		
Mean	32 = 7.023 ABCDE		Mean 1 = 6.663 DEF		
Mean	33 = 6.680 DEF		Mean 3 = 6.617 DEFG		
Mean	34 = 6.907 ABCDE		Mean 8 = 6.573 EFG		
Mean	35 = 7.183 ABC		Mean 7 = 6.570 EFG		
Mean	36 = 6.870 ABCDE		Mean 16 = 6.243 FGH		
Mean	37 = 6.957 ABCDE		Mean 25 = 6.143 GH		
Mean	38 = 7.070 ABCDE		Mean 20 = 6.037 H		

TPR 96B = Dandy II [21% Prostrate
 PR 97DII = Dandy II [79% Erect

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Table 3B. Color in 1999 of perennial ryegrass cultivar = Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 in Fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP

Case Range: 115-152

Variable 12: COLOR 5-11-99, 1=LT GR, 2=MED GR, 3=DK GR, 4=BLUE GREEN

Error Mean Square = 0.5130 Error Degrees of Freedom = 74

No. of observations to calculate a mean = 3

Least Significant Difference Test

LSD value = 1.165 at alpha = 0.050

	Original Order	Ranked Order	LINE
Mean	1 = 2.667 ABCD	Mean 27 = 3.667 A	
Mean	2 = 3.333 AB	Mean 14 = 3.333 AB	
Mean	3 = 2.000 CDEF	Mean 11 = 3.333 AB	
Mean	4 = 1.667 DEF	Mean 2 = 3.333 AB	<u>HEADSTART</u>
Mean	5 = 2.333 BCDE	Mean 17 = 3.333 AB	<u>ADVANTAGE</u>
Mean	6 = 2.000 CDEF	Mean 15 = 3.000 ABC	
Mean	7 = 2.000 CDEF	Mean 10 = 3.000 ABC	
Mean	8 = 1.667 DEF	Mean 38 = 3.000 ABC	
Mean	9 = 2.000 CDEF	Mean 28 = 3.000 ABC	
Mean	10 = 3.000 ABC	Mean 24 = 3.000 ABC	PR 97EL2
Mean	11 = 3.333 AB	Mean 36 = 3.000 ABC	PANTHER
Mean	12 = 2.667 ABCD	Mean 22 = 2.667 ABCD	TPR 96C
Mean	13 = 1.000 F	Mean 26 = 2.667 ABCD	MORNING STAR
Mean	14 = 3.333 AB	Mean 23 = 2.667 ABCD	PINNACLE
Mean	15 = 3.000 ABC	Mean 1 = 2.667 ABCD	PALMER II
Mean	16 = 2.667 ABCD	Mean 12 = 2.667 ABCD	ACHEIVER
Mean	17 = 3.333 AB	Mean 32 = 2.667 ABCD	JIFFIX
Mean	18 = 2.333 BCDE	Mean 16 = 2.667 ABCD	SUNSHINE
Mean	19 = 2.000 CDEF	Mean 21 = 2.667 ABCD	
Mean	20 = 1.333 EF	Mean 31 = 2.667 ABCD	MANHATTAN II
Mean	21 = 2.667 ABCD	Mean 34 = 2.667 ABCD	SATURN
Mean	22 = 2.667 ABCD	Mean 35 = 2.667 ABCD	TPR 96A
Mean	23 = 2.667 ABCD	Mean 30 = 2.667 ABCD	TPR 96B
Mean	24 = 3.000 ABC	Mean 5 = 2.333 BCDE	RACER
Mean	25 = 1.000 F	Mean 18 = 2.333 BCDE	CITATION II
Mean	26 = 2.667 ABCD	Mean 29 = 2.333 BCDE	LYNX
Mean	27 = 3.667 A	Mean 33 = 2.333 BCDE	PR 97DII = Dandy II
Mean	28 = 3.000 ABC	Mean 3 = 2.000 CDEF	TARGET
Mean	29 = 2.333 BCDE	Mean 19 = 2.000 CDEF	BRIGHTSTAR
Mean	30 = 2.667 ABCD	Mean 9 = 2.000 CDEF	MAGIC
Mean	31 = 2.667 ABCD	Mean 7 = 2.000 CDEF	ELF
Mean	32 = 2.667 ABCD	Mean 6 = 2.000 CDEF	DELAWARE DWARF
Mean	33 = 2.333 BCDE	Mean 37 = 2.000 CDEF	CUTTER
Mean	34 = 2.667 ABCD	Mean 8 = 1.667 DEF	TPR 96P
Mean	35 = 2.667 ABCD	Mean 4 = 1.667 DEF	DERBY SUPREME
Mean	36 = 3.000 ABC	Mean 20 = 1.333 EF	CALYPSO II
Mean	37 = 2.000 CDEF	Mean 13 = 1.000 F	MANHATTAN
F	38 = 3.000 ABC	Mean 25 = 1.000 F	LYNN
			PENNFINE

Table 4B. Rough vs smooth rachis in perennial ryegrass cv Dandy II in 1999
 (Code PR97DII) compared with other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

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Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP

Title: 1998 Planted - PR PVP Trial - 1999 Year Data

Case Range : 115 - 152 Variable 10; Rachis 1= Smooth 2= Rough

Error Mean Square = 0.007000 Error Degrees of Freedom = 74

No. of Observations to calculate a mean = 3

Least Significant Difference Test

LSD value = 0.1361 at alpha = 0.050

		Original Order	Ranked Order	LINE	PERCENT
					Smooth/Rough
Mean	1 =	1.117 ABCDEF	Mean 5 = 1.233 A	CITATION II	
Mean	2 =	1.133 ABCDEF	Mean 14 = 1.233 A		
Mean	3 =	1.117 ABCDEF	Mean 27 = 1.233 A		
Mean	4 =	1.100 ABCDEF	Mean 23 = 1.217 AB	PALMER II	
Mean	5 =	1.233 A	Mean 26 = 1.200 ABC	PINNACLE	
Mean	6 =	1.117 ABCDEF	Mean 12 = 1.183 ABCD	JIFFIE	
Mean	7 =	1.133 ABCDEF	Mean 11 = 1.183 ABCD	HEADSTART	
Mean	8 =	1.083 BCDEF	Mean 35 = 1.183 ABCD	TPR 96B ----	18 82
Mean	9 =	1.067 CDEF	Mean 28 = 1.167 ABCD	PR 97EL2 =	12 88
Mean	10 =	1.150 ABCDE	Mean 15 = 1.167 ABCD		
Mean	11 =	1.183 ABCD	Mean 10 = 1.150 ABCDE		
Mean	12 =	1.183 ABCD	Mean 24 = 1.150 ABCDE	PANTHER	
Mean	13 =	1.100 ABCDEF	Mean 7 = 1.133 ABCDEF	DELAWARE DWARF	
Mean	14 =	1.233 A	Mean 2 = 1.133 ABCDEF	ADVANTAGE	
Mean	15 =	1.167 ABCD	Mean 1 = 1.117 ABCDEF	ACHIEVER	
Mean	16 =	1.050 DEF	Mean 3 = 1.117 ABCDEF	BRIGHTSTAR	
Mean	17 =	1.067 CDEF	Mean 32 = 1.117 ABCDEF	SUNSHINE	
Mean	18 =	1.117 ABCDEF	Mean 18 = 1.117 ABCDEF	LYNX	
Mean	19 =	1.050 DEF	Mean 30 = 1.117 ABCDEF	RACE	
Mean	20 =	1.000 F	Mean 6 = 1.117 ABCDEF	CUTTER	
Mean	21 =	1.017 EF	Mean 25 = 1.117 ABCDEF	PENNSYLVANIA -----	12 88
Mean	22 =	1.067 CDEF	Mean 36 = 1.117 ABCDEF	TPR 96C ----	12 88
Mean	23 =	1.217 AB	Mean 37 = 1.100 ABCDEF	TPR 96P ----	10 90
Mean	24 =	1.150 ABCDE	Mean 13 = 1.100 ABCDEF	LIAH -----	10 90
Mean	25 =	1.117 ABCDEF	Mean 4 = 1.100 ABCDEF	CALYPSO II	
Mean	26 =	1.200 ABC	Mean 34 = 1.083 BCDEF	TPR 96A ----	8 92
Mean	27 =	1.233 A	Mean 8 = 1.083 BCDEF	DERBY SUPREME	
Mean	28 =	1.167 ABCD	Mean 33 = 1.083 BCDEF	TARGET -----	8 92
Mean	29 =	1.067 CDEF	Mean 9 = 1.067 CDEF	ELF -----	7 93
Mean	30 =	1.117 ABCDEF	Mean 22 = 1.067 CDEF	MORNING STAR	
Mean	31 =	1.017 EF	Mean 17 = 1.067 CDEF	PR 97DII ----- Dandy II ---	7 93
Mean	32 =	1.117 ABCDEF	Mean 29 = 1.067 CDEF		
Mean	33 =	1.083 BCDEF	Mean 16 = 1.050 DEF		
Mean	34 =	1.083 BCDEF	Mean 38 = 1.050 DEF	MAGIC -----	6 94
Mean	35 =	1.183 ABCD	Mean 19 = 1.050 DEF	HANUATAN II	
Mean	36 =	1.117 ABCDEF	Mean 21 = 1.017 EF	SATURN -----	
Mean	37 =	1.100 ABCDEF	Mean 31 = 1.017 EF	HANUATAN -----	0 100
Mean	38 =	1.050 DEF	Mean 20 = 1.000 F		

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Table 5B. Flag leaf height in 1999 of perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP
 Title : 1998 Planted - PR PVP Trial - 1999 year data
 Case Range : 115 - 152 Variable 18 : Flag leaf height (CM)
 Error Mean Square = 9.561 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 5.031 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 23.36	BCDEFGH	Mean 20 = 29.33	A	MANHATTAN
Mean	2 = 19.48	GH	Mean 13 = 28.17	AB	LINN
Mean	3 = 21.36	DEFGH	Mean 31 = 26.57	ABC	SATURN
Mean	4 = 23.24	BCDEFGH	Mean 22 = 26.43	ABC	MORNING STAR
Mean	5 = 21.71	CDEFGH	Mean 25 = 26.19	ABCD	PENNPIKE
Mean	6 = 24.23	BCDEFG	Mean 19 = 25.40	ABCDE	MAGIC
Mean	7 = 23.50	BCDEFG	Mean 9 = 25.18	ABCDEF	ELF
Mean	8 = 24.86	ABCDEF	Mean 8 = 24.86	ABCDEF	DERBY SUPREME
Mean	9 = 25.18	ABCDEF	Mean 18 = 24.57	ABCDEF	LYNX
Mean	10 = 22.88	CDEFGH	Mean 29 = 24.29	BCDEFG	PR 97DII = Dandy II
Mean	11 = 22.21	CDEFGH	Mean 6 = 24.23	BCDEFG	CUTTER
Mean	12 = 23.80	BCDEFG	Mean 32 = 23.94	BCDEFG	SUNSHINE
Mean	13 = 28.17	AB	Mean 12 = 23.80	BCDEFG	JIFFIE
Mean	14 = 20.37	FGH	Mean 30 = 23.71	BCDEFG	RACER
Mean	15 = 21.04	EFGH	Mean 26 = 23.70	BCDEFG	Pinnacle
Mean	16 = 23.55	BCDEFG	Mean 16 = 23.55	BCDEFG	TPR 96A
Mean	17 = 21.33	DEFGH	Mean 34 = 23.51	BCDEFG	TPR 96P
Mean	18 = 24.57	ABCDEF	Mean 37 = 23.51	BCDEFG	DELaware DWARF
Mean	19 = 25.40	ABCDE	Mean 7 = 23.50	BCDEFG	ACHIEVER
Mean	20 = 29.33	A	Mean 1 = 23.36	BCDEFGH	CALYPSO II
Mean	21 = 23.02	CDEFGH	Mean 4 = 23.24	BCDEPGH	TPR 96B
Mean	22 = 26.43	ABC	Mean 35 = 23.06	CDEFGH	MANHATTAN II
Mean	23 = 20.16	FGH	Mean 21 = 23.02	CDEFGH	TPR 96C
Mean	24 = 21.80	CDEFGH	Mean 10 = 22.88	CDEFGH	HEADSTART
Mean	25 = 26.19	ABCD	Mean 36 = 22.64	CDEFGH	TARGET
Mean	26 = 23.70	BCDEFG	Mean 11 = 22.21	CDEFGH	PANTHER
Mean	27 = 18.38	H	Mean 33 = 22.13	CDEFGH	CITATION II
Mean	28 = 20.97	EFGH	Mean 24 = 21.80	CDEFGH	BRIGHTSTAR
Mean	29 = 24.29	BCDEFG	Mean 38 = 21.73	CDEFGH	PR 97EL2
Mean	30 = 23.71	BCDEFG	Mean 5 = 21.71	CDEFGH	PALMER II
Mean	31 = 26.57	ABC	Mean 3 = 21.36	DEFGH	ADVANTAGE
Mean	32 = 23.94	BCDEFG	Mean 17 = 21.33	DEFGH	
Mean	33 = 22.13	CDEFGH	Mean 15 = 21.04	EFGH	
Mean	34 = 23.51	BCDEFG	Mean 28 = 20.97	EFGH	
Mean	35 = 23.06	CDEFGH	Mean 14 = 20.37	FHG	
Mean	36 = 22.64	CDEFGH	Mean 23 = 20.16	FHG	
Mean	37 = 23.51	BCDEFG	Mean 2 = 19.48	GH	
Mean	38 = 21.73	CDEFGH	Mean 27 = 18.38	H	

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Table 6B. Flag leaf width in 1999 of perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared with other cultavars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data file 99PRPVP
 Title: 1998 Planted - PR PVP Trial - 1999 Year Data
 Case Range : 115 - 152 Variable 11: Flag Leaf Width (MM)
 Error Mean Square = 0.08500 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 0.4743 at alpha = 0.050

	Original Order	Ranked Order	LINE
Mean	1 = 2.287 DEF	Mean 7 = 2.867 A	DELAWARE DWARF
Mean	2 = 2.713 ABCDE	Mean 13 = 2.817 AB	LINN
Mean	3 = 2.583 ABCDEF	Mean 8 = 2.770 ABC	DERBY SUPREME
Mean	4 = 2.537 ABCDEF	Mean 31 = 2.767 ABC	SATURN
Mean	5 = 2.483 ABCDEF	Mean 20 = 2.737 ABCD	MANHATTAN
Mean	6 = 2.687 ABCDE	Mean 9 = 2.727 ABCD	ELF
Mean	7 = 2.867 A	Mean 2 = 2.713 ABCDE	ADVANTAGE
Mean	8 = 2.770 ABC	Mean 19 = 2.710 ABCDE	MAGIC
Mean	9 = 2.727 ABCD	Mean 6 = 2.687 ABCDE	CUTTER
Mean	10 = 2.677 ABCDE	Mean 16 = 2.687 ABCDE	
Mean	11 = 2.243 EF	Mean 38 = 2.677 ABCDE	TPR 96P
Mean	12 = 2.580 ABCDEF	Mean 10 = 2.677 ABCDE	PENNFINE
Mean	13 = 2.817 AB	Mean 37 = 2.670 ABCDEF	TPR 96C
Mean	14 = 2.593 ABCDEF	Mean 25 = 2.627 ABCDEF	
Mean	15 = 2.567 ABCDEF	Mean 36 = 2.617 ABCDEF	
Mean	16 = 2.687 ABCDE	Mean 14 = 2.593 ABCDEF	BRIGHTSTAR
Mean	17 = 2.370 BCDEF	Mean 3 = 2.583 ABCDEF	JIFFIE
Mean	18 = 2.387 BCDEF	Mean 12 = 2.580 ABCDEF	
Mean	19 = 2.710 ABCDE	Mean 15 = 2.567 ABCDEF	CALYPSO II
Mean	20 = 2.737 ABCD	Mean 4 = 2.537 ABCDEF	TPR 96B
Mean	21 = 2.453 ABCDEF	Mean 35 = 2.527 ABCDEF	TPR 96A
Mean	22 = 2.467 ABCDEF	Mean 34 = 2.527 ABCDEF	RACER
Mean	23 = 2.327 CDEF	Mean 30 = 2.503 ABCDEF	CITATION II
Mean	24 = 2.397 ABCDEF	Mean 5 = 2.483 ABCDEF	MORNING STAR
Mean	25 = 2.627 ABCDEF	Mean 22 = 2.467 ABCDEF	MANHATTAN II
Mean	26 = 2.313 CDEF	Mean 21 = 2.453 ABCDEF	TARGET
Mean	27 = 2.197 F	Mean 33 = 2.443 ABCDEF	PANTHER
Mean	28 = 2.303 CDEF	Mean 24 = 2.397 ABCDEF	LYNX
Mean	29 = 2.317 CDEF	Mean 18 = 2.387 BCDEF	
Mean	30 = 2.503 ABCDEF	Mean 17 = 2.370 BCDEF	SUNSHINE
Mean	31 = 2.767 ABC	Mean 32 = 2.347 BCDEF	PALMER II
Mean	32 = 2.347 BCDEF	Mean 23 = 2.327 CDEF	PR 97DII = Dandy II
Mean	33 = 2.443 ABCDEF	Mean 29 = 2.317 CDEF	Pinnacle
Mean	34 = 2.527 ABCDEF	Mean 26 = 2.313 CDEF	PR 97EL2
Mean	35 = 2.527 ABCDEF	Mean 28 = 2.303 CDEF	ACHIEVER
Mean	36 = 2.617 ABCDEF	Mean 1 = 2.287 DEF	
Mean	37 = 2.670 ABCDEF	Mean 11 = 2.243 EF	HEADSTART
Y	38 = 2.677 ABCDK	Mean 27 = 2.197 F	

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Table 7B. Flag leaf length in 1999 of perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP
 Title : 1998 Planted - PR PVP Trial - 1999 Year Data
 Case Range: 115-152, Variable 5 : Flag leaf length (CM)
 Error Mean Square = 3.485 Error Degrees of Freedom = 74
 No. observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 3.037 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 9.770	BCDEFGHI	Mean 20 = 15.87	A	MANHATTAN
Mean	2 = 10.01	BCDEFGHI	Mean 37 = 12.80	B	TPR 96P
Mean	3 = 9.997	BCDEFGHI	Mean 34 = 12.70	BC	TPR 96A
Mean	4 = 9.957	BCDEFGHI	Mean 8 = 12.59	BCD	DERBY SUPREME
Mean	5 = 9.687	CDEFGHI	Mean 36 = 12.46	BCDE	TPR 96C
Mean	6 = 10.27	BCDEFGHI	Mean 31 = 12.25	BCDEF	SATURN
Mean	7 = 11.15	BCDEFGH	Mean 35 = 12.21	BCDEF	TPR 96B
Mean	8 = 12.59	BCD	Mean 38 = 12.17	BCDEF	
Mean	9 = 10.97	BCDEFGH	Mean 19 = 11.52	BCDEFG	MAGIC
Mean	10 = 9.527	EFGHI	Mean 13 = 11.38	BCDEFG	LINA
Mean	11 = 8.840	GHI	Mean 22 = 11.23	BCDEFGH	MORNING STAR
Mean	12 = 9.610	DEFGHI	Mean 7 = 11.15	BCDEFGH	DELAWARE DWARF
Mean	13 = 11.38	BCDEFG	Mean 15 = 11.00	BCDEFGH	
Mean	14 = 8.307	HI	Mean 9 = 10.97	BCDEFGH	ELF
Mean	15 = 11.00	BCDEFGH	Mean 29 = 10.88	BCDEFGH	PR 97DII = Dandy II
Mean	16 = 10.13	BCDEFGHI	Mean 6 = 10.27	BCDEFGHI	CUTTER
Mean	17 = 10.10	BCDEFGHI	Mean 30 = 10.15	BCDEFGHI	RACER
Mean	18 = 8.827	GHI	Mean 16 = 10.13	BCDEFGHI	
Mean	19 = 11.52	BCDEFG	Mean 17 = 10.10	BCDEFGHI	ADVANTAGE
Mean	20 = 15.87	A	Mean 2 = 10.01	BCDEFGHI	BRIGHTSTAR
Mean	21 = 9.310	FGHI	Mean 3 = 9.997	BCDEFGHI	CALYPSO II
Mean	22 = 11.23	BCDEFGH	Mean 4 = 9.957	BCDEFGHI	ACHIEVER
Mean	23 = 8.827	GHI	Mean 1 = 9.770	BCDEFGHI	PANTHER
Mean	24 = 9.737	CDEFGHI	Mean 24 = 9.737	CDEFGHI	CITATION II
Mean	25 = 9.327	FGHI	Mean 5 = 9.687	CDEFGHI	JIFFIE
Mean	26 = 9.420	FGHI	Mean 12 = 9.610	DEFGHI	PR 97EL2
Mean	27 = 7.450	I	Mean 28 = 9.583	DEFGHI	TARGET
Mean	28 = 9.583	DEFGHI	Mean 33 = 9.527	EFGHI	
Mean	29 = 10.88	BCDEFGH	Mean 10 = 9.527	EFGHI	PINNACLE
Mean	30 = 10.15	BCDEFGHI	Mean 26 = 9.420	FGHI	PENNPIPE
Mean	31 = 12.25	BCDEF	Mean 25 = 9.327	FGHI	MANHATTAN II
Mean	32 = 9.033	GHI	Mean 21 = 9.310	FGHI	SUNSHINE
Mean	33 = 9.527	EFGHI	Mean 32 = 9.033	GHI	HEADSTART
Mean	34 = 12.70	BC	Mean 11 = 8.840	GHI	LYNX
Mean	35 = 12.21	BCDEF	Mean 18 = 8.827	GHI	PALMER II
Mean	36 = 12.46	BCDE	Mean 23 = 8.827	GHI	
Mean	37 = 12.80	B	Mean 14 = 8.307	HI	
Y	38 = 12.17	BCDEF	Mean 27 = 7.450	I	

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Table 8B. Spikelet length in 1999 of perennial ryegrass cv Dandy II
 (Code PR 97 II) compared with other cultivars transplanted
 to spaced plant plots in fall 1998 near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP
 Title: 1998 Planted - PR PVP Trial - 1999 Year Data
 Case Range: 279-316 Variable 24: Length of Spikelet (MM)
 Error Mean Square = 1.164 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 1.755 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 =	15.04	ABCD	Mean	9 = 16.23 A
Mean	2 =	14.40	BCD	Mean	31 = 15.83 AB
Mean	3 =	14.24	BCD	Mean	18 = 15.67 ABC
Mean	4 =	14.88	ABCD	Mean	6 = 15.49 ABC
Mean	5 =	15.06	ABCD	Mean	30 = 15.29 ABC
Mean	6 =	15.49	ABC	Mean	22 = 15.29 ABC
Mean	7 =	14.80	ABCD	Mean	34 = 15.26 ABC
Mean	8 =	14.46	BCD	Mean	26 = 15.19 ABCD
Mean	9 =	16.23	A	Mean	10 = 15.19 ABCD
Mean	10 =	15.19	ABCD	Mean	5 = 15.06 ABCD
Mean	11 =	14.18	BCD	Mean	1 = 15.04 ABCD
Mean	12 =	14.92	ABCD	Mean	24 = 14.94 ABCD
Mean	13 =	14.40	BCD	Mean	12 = 14.92 ABCD
Mean	14 =	14.17	BCD	Mean	4 = 14.88 ABCD
Mean	15 =	14.24	BCD	Mean	7 = 14.80 ABCD
Mean	16 =	14.16	BCD	Mean	25 = 14.67 ABCD
Mean	17 =	14.45	BCD	Mean	35 = 14.58 ABCD
Mean	18 =	15.67	ABC	Mean	36 = 14.50 ABCD
Mean	19 =	14.21	BCD	Mean	29 = 14.49 ABCD
Mean	20 =	13.49	D	Mean	8 = 14.46 BCD
Mean	21 =	14.07	CD	Mean	17 = 14.45 BCD
Mean	22 =	15.29	ABC	Mean	32 = 14.40 BCD
Mean	23 =	14.38	BCD	Mean	2 = 14.40 BCD
Mean	24 =	14.94	ABCD	Mean	13 = 14.40 BCD
Mean	25 =	14.67	ABCD	Mean	38 = 14.38 BCD
Mean	26 =	15.19	ABCD	Mean	23 = 14.38 BCD
Mean	27 =	13.97	CD	Mean	28 = 14.35 BCD
Mean	28 =	14.35	BCD	Mean	37 = 14.29 BCD
Mean	29 =	14.49	ABCD	Mean	3 = 14.24 BCD
Mean	30 =	15.29	ABC	Mean	15 = 14.24 BCD
Mean	31 =	15.83	AB	Mean	33 = 14.22 BCD
Mean	32 =	14.40	BCD	Mean	19 = 14.21 BCD
Mean	33 =	14.22	BCD	Mean	11 = 14.18 BCD
Mean	34 =	15.26	ABC	Mean	14 = 14.17 BCD
Mean	35 =	14.58	ABCD	Mean	16 = 14.16 BCD
Mean	36 =	14.50	ABCD	Mean	21 = 14.07 CD
Mean	37 =	14.29	BCD	Mean	27 = 13.97 CD
Mean	38 =	14.38	BCD	Mean	20 = 13.49 D

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Table 9B. Outer glume length (MM) in 1999 of perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 to spaced plant plots in fall 1998 near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP
 Title : 1998 Planted - PR PVP Trial - 1999 Year Data
 Case Range : 197-234 Variable 21 : Outer Glume Length (MM)
 Error Mean Square = 0.4000 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3.
 Least Significant Difference Test
 LSD value = 1.029 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 9.103 ABCD		Mean 13 = 9.610 A		LINN
Mean	2 = 8.037 EFGHI		Mean 25 = 9.270 AB		PENNPIKE
Mean	3 = 7.943 FGHI		Mean 18 = 9.160 ABC		LYNX
Mean	4 = 8.160 CDEFGHI		Mean 1 = 9.103 ABCD		ACHIEVER
Mean	5 = 8.437 BCDEFGH		Mean 26 = 9.093 ABCD		Pinnacle
Mean	6 = 8.567 BCDEFG		Mean 31 = 9.053 ABCDE		SATURN
Mean	7 = 8.233 CDEFGHI		Mean 33 = 9.017 ABCDE		TARGET
Mean	8 = 8.753 ABCDEF		Mean 8 = 8.753 ABCDEF		DERBY SUPREME
Mean	9 = 8.233 CDEFGHI		Mean 6 = 8.567 BCDEFG		CUTTER
Mean	10 = 7.980 FGHI		Mean 30 = 8.537 BCDEFG		RACER
Mean	11 = 8.393 BCDEFGH		Mean 5 = 8.437 BCDEFGH		CITATION II
Mean	12 = 8.270 BCDEFGHI		Mean 19 = 8.427 BCDEFGH		MAGIC
Mean	13 = 9.610 A		Mean 37 = 8.417 BCDEFGH		TPR 96P
M.	14 = 7.653 GHI		Mean 11 = 8.393 BCDEFGH		HEADSTART
Mean	15 = 7.777 FGHI		Mean 34 = 8.277 BCDEFGHI		TPR 96A
Mean	16 = 8.117 DEFGHI		Mean 12 = 8.270 BCDEFGHI		JIFFIE
Mean	17 = 7.887 PGHI		Mean 7 = 8.233 CDEFGHI		DELAWARE DWARF
Mean	18 = 9.160 ABC		Mean 9 = 8.233 CDEFGHI		ELF
Mean	19 = 8.427 BCDEFGH		Mean 20 = 8.197 CDEFGHI		MANHATTAN
Mean	20 = 8.197 CDEFGHI		Mean 4 = 8.160 CDEFGHI		CALYPSO II
Mean	21 = 7.303 I		Mean 22 = 8.160 CDEFGHI		MORNING STAR
Mean	22 = 8.160 CDEFGHI		Mean 29 = 8.143 CDEFGHI		PR 97 DII = Dandy II
Mean	23 = 7.443 HI		Mean 27 = 8.127 DEFGHI		
Mean	24 = 7.860 PGHI		Mean 36 = 8.117 DEFGHI		TPR 96C
Mean	25 = 9.270 AB		Mean 16 = 8.117 DEFGHI		
Mean	26 = 9.093 ABCD		Mean 2 = 8.037 EFGHI		ADVANTAGE
Mean	27 = 8.127 DEFGHI		Mean 10 = 7.980 FGHI		
Mean	28 = 7.603 GHI		Mean 32 = 7.977 FGHI		SUNSHINE
Mean	29 = 8.143 CDEFGHI		Mean 3 = 7.943 FGHI		BRIGHTSTAR
Mean	30 = 8.537 BCDEFG		Mean 35 = 7.910 FGHI		TPR 96B
Mean	31 = 9.053 ABCDE		Mean 17 = 7.887 FGHI		
Mean	32 = 7.977 FGHI		Mean 24 = 7.860 FGHI		PANTHER
Mean	33 = 9.017 ABCDE		Mean 15 = 7.777 FGHI		
Mean	34 = 8.277 BCDEFGHI		Mean 14 = 7.653 GHI		
Mean	35 = 7.910 FGHI		Mean 28 = 7.603 GHI		PR 97 EL2
Mean	36 = 8.117 DEFGHI		Mean 23 = 7.443 HI		PALMER II
Mean	37 = 8.417 BCDEFGH		Mean 38 = 7.343 I		
Mean	38 = 7.343 I		Mean 21 = 7.303 I		MANHATTAN II

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Table 10B. Florets per spikelet in 1999 in perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data file 99PRPVP
 Title : 1998 Planted - PR PVP Trial - 1999 Year Data
 Case Range: 115-152 Variable 9: # of Florets/Spikelet
 Error Mean Square = 1.984 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 2.292 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 18.35 BCDEF	Mean	20 = 22.57 A		MANHATTAN
Mean	2 = 18.28 BCDEF	Mean	33 = 20.53 AB		TARGET
Mean	3 = 18.38 BCDEF	Mean	19 = 19.90 BC		MAGIC
Mean	4 = 17.48 DEFGH	Mean	9 = 19.48 BCD		ELF
Mean	5 = 16.97 FGHI	Mean	8 = 19.42 BCD		DERBY SUPREME
Mean	6 = 17.30 DEFGH	Mean	31 = 19.35 BCDE		SATURN
Mean	7 = 18.93 BCDEF	Mean	34 = 19.17 BCDEF		TPR 96A
Mean	8 = 19.42 BCD	Mean	38 = 19.15 BCDEF		
Mean	9 = 19.48 BCD	Mean	17 = 19.10 BCDEF		
Mean	10 = 18.53 BCDEF	Mean	18 = 19.05 BCDEF		LYNN
Mean	11 = 17.69 CDEFGH	Mean	22 = 18.97 BCDEF		MORNING STAR
Mean	12 = 17.77 CDEFGH	Mean	7 = 18.93 BCDEF		DELAWARE DWARF
Mean	13 = 14.83 I	Mean	10 = 18.53 BCDEF		
Mean	14 = 17.55 DEFGH	Mean	16 = 18.53 BCDEF		TPR 96C
Mean	15 = 17.10 EFGHI	Mean	36 = 18.53 BCDEF		
Mean	16 = 18.53 BCDEF	Mean	3 = 18.38 BCDEF		BRIGHTSTAR
Mean	17 = 19.10 BCDEF	Mean	1 = 18.35 BCDEF		ACHIEVER
Mean	18 = 19.05 BCDEF	Mean	24 = 18.35 BCDEF		PANTHER
Mean	19 = 19.90 BC	Mean	2 = 18.28 BCDEF		ADVANTAGE
Mean	20 = 22.57 A	Mean	26 = 18.22 CDEFG		PINNACLE
Mean	21 = 17.90 CDEFGH	Mean	35 = 18.12 CDEFG		TPR 96B
Mean	22 = 18.97 BCDEF	Mean	28 = 18.12 CDEFG		PR 97EL2
Mean	23 = 15.93 GHI	Mean	37 = 17.95 CDEFGH		TPR 96P
Mean	24 = 18.35 BCDEF	Mean	32 = 17.92 CDEFGH		SUNSHINE
Mean	25 = 17.83 CDEFGH	Mean	21 = 17.90 CDEFGH		MANHATTAN II
Mean	26 = 18.22 CDEFG	Mean	25 = 17.83 CDEFGH		PENNPIKE
Mean	27 = 15.77 HI	Mean	12 = 17.77 CDEFGH		JIFFIE
Mean	28 = 18.12 CDEFG	Mean	29 = 17.77 CDEFGH		PR 97DII = Dandy II
Mean	29 = 17.77 CDEFGH	Mean	30 = 17.73 CDEFGH		RACER
Mean	30 = 17.73 CDEFGH	Mean	11 = 17.69 CDEFGH		HEADSTART
Mean	31 = 19.35 BCDE	Mean	14 = 17.55 DEFGH		
Mean	32 = 17.92 CDEFGH	Mean	4 = 17.48 DEFGH		CALYPSO II
Mean	33 = 20.53 AB	Mean	6 = 17.30 DEFGH		CUTTER
Mean	34 = 19.17 BCDEF	Mean	15 = 17.10 EFGHI		
Mean	35 = 18.12 CDEFG	Mean	5 = 16.97 FGHI		CITATION II
Mean	36 = 18.53 BCDEF	Mean	23 = 15.93 GHI		PALMER II
Mean	37 = 17.95 CDEFGH	Mean	27 = 15.77 HI		
Mean	38 = 19.15 BCDEF	Mean	13 = 14.83 I		LINN

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Table 11B. Spikelets/spike in 1999 in perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP
 Title : 1998 Planted - PR PVP Trial - 1999 Year Data
 Case Range: 197-234 Variable 22: # Spikelets/Spike
 Error Mean Square = 2.013 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 2.308 at alpha = 0.050

	Original Order	Ranked Order	LINE
Mean	1 = 17.98 BCDEF	Mean 20 = 22.33 A	MANHATTAN
Mean	2 = 18.02 BCDFP	Mean 19 = 19.95 B	MAGIC
Mean	3 = 18.48 BCDE	Mean 33 = 19.83 B	TARGET
Mean	4 = 16.77 EFGH	Mean 31 = 19.67 BC	SATURN
Mean	5 = 16.75 EFGH	Mean 34 = 19.13 BCD	TPR 96A
Mean	6 = 16.85 DEFGH	Mean 8 = 19.08 BCD	DERBY SUPREME
Mean	7 = 17.32 DEFGH	Mean 22 = 18.93 BCDE	MORNING STAR
Mean	8 = 19.08 BCD	Mean 38 = 18.83 BCDE	
Mean	9 = 16.97 DEFGH	Mean 36 = 18.78 BCDE	TPR 96C
Mean	10 = 17.51 CDEFGH	Mean 16 = 18.67 BCDE	
Mean	11 = 17.68 BCDFGHI	Mean 3 = 18.48 BCDE	BRIGHTSTAR
Mean	12 = 18.32 BCDEF	Mean 37 = 18.42 BCDE	TPR 96P
N	13 = 16.04 FGH	Mean 17 = 18.35 BCDE	JIFFIE
Mean	14 = 17.68 BCDEFGHI	Mean 12 = 18.32 BCDEF	LYNX
Mean	15 = 16.87 DEFGH	Mean 18 = 18.17 BCDEF	PR 97 BL2
Mean	16 = 18.67 BCDE	Mean 28 = 18.05 BCDEF	Pinnacle
Mean	17 = 18.35 BCDE	Mean 26 = 18.03 BCDEF	PANTHER
Mean	18 = 18.17 BCDEF	Mean 24 = 18.02 BCDEF	ADVANTAGE
Mean	19 = 19.95 B	Mean 2 = 18.02 BCDEF	ACHIEVER
Mean	20 = 22.33 A	Mean 1 = 17.98 BCDEF	TPR 96B
Mean	21 = 17.85 BCDFPG	Mean 35 = 17.87 BCDEFG	MANHATTAN II
Mean	22 = 18.93 BCDE	Mean 21 = 17.85 BCDEFG	RACER
Mean	23 = 15.63 GH	Mean 30 = 17.73 BCDEFGH	HEADSTART
Mean	24 = 18.02 BCDEF	Mean 11 = 17.68 BCDEFGH	
Mean	25 = 17.45 CDEFGH	Mean 14 = 17.68 BCDEFGH	
Mean	26 = 18.03 BCDEF	Mean 10 = 17.51 CDEFGH	
Mean	27 = 15.45 H	Mean 25 = 17.45 CDEFGH	PENNPINE
Mean	28 = 18.05 BCDEF	Mean 32 = 17.40 CDEFGH	SUNSHINE
Mean	29 = 16.89 DEFGH	Mean 7 = 17.32 DEFGH	DELAWARE DWARF
Mean	30 = 17.73 BCDEFGH	Mean 9 = 16.97 DEFGH	ELF
Mean	31 = 19.67 BC	Mean 29 = 16.89 DEFGH	PR 97 DII = Dandy II
Mean	32 = 17.40 CDEFGH	Mean 15 = 16.87 DEFGH	CUTTER
Mean	33 = 19.83 B	Mean 6 = 16.85 DEFGH	CALYPSO II
Mean	34 = 19.13 BCD	Mean 4 = 16.77 EFGH	CITATION II
Mean	35 = 17.87 BCDFG	Mean 5 = 16.75 EFGH	LINN
Mean	36 = 18.78 BCDE	Mean 13 = 16.04 FGH	PALMER II
Mean	37 = 18.42 BCDE	Mean 23 = 15.63 GH	
N	38 = 18.83 BCDE	Mean 27 = 15.45 H	

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Table 12B. Plant height (CM) in 1999 of perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP
 Title: 1998 Planted - PR PVP Trial - 1999 Year Data
 Case Range: 238 - 275 Variable 20: Plant Height (CM)
 Error Mean Square = 23.62 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 7.907 at alpha = 0.050

	Original Order	Ranked Order	LINE
Mean	1 = 48.99 ABCDEF	Mean 20 = 56.37 A	MANHATTAN
Mean	2 = 40.23 GH	Mean 31 = 55.57 AB	SATURN
Mean	3 = 45.10 DEFGH	Mean 25 = 54.03 ABC	PENNPIKE
Mean	4 = 48.25 BCDEF	Mean 13 = 52.80 ABCD	LINN
Mean	5 = 44.71 EFGH	Mean 19 = 51.39 ABCDE	MAGIC
Mean	6 = 49.66 ABCDEF	Mean 8 = 51.33 ABCDE	DERBY SUPREME
Mean	7 = 48.00 BCDEFG	Mean 22 = 51.18 ABCDE	MORNING STAR
Mean	8 = 51.33 ABCDE	Mean 30 = 51.14 ABCDE	RACER
Mean	9 = 49.92 ABCDEF	Mean 18 = 51.10 ABCDE	LYNX
Mean	10 = 47.72 BCDEFGH	Mean 34 = 50.50 ABCDEF	TPR 96A
Mean	11 = 45.47 DEFGH	Mean 29 = 50.33 ABCDEF	PR 97 DII = Dandy II
Mean	12 = 48.29 BCDEF	Mean 9 = 49.92 ABCDEF	ELF
Mean	13 = 52.80 ABCD	Mean 37 = 49.73 ABCDEF	TPR 96P
M.	14 = 44.16 EFGH	Mean 6 = 49.66 ABCDEF	CUTTER
Mean	15 = 44.20 EFGH	Mean 16 = 49.08 ABCDEF	ACHIEVER
Mean	16 = 49.08 ABCDEF	Mean 1 = 48.99 ABCDEF	TPR 96B
Mean	17 = 44.67 EFGH	Mean 35 = 48.99 ABCDEF	SUNSHINE
Mean	18 = 51.10 ABCDE	Mean 32 = 48.86 ABCDEF	Pinnacle
Mean	19 = 51.39 ABCDE	Mean 26 = 48.48 ABCDEF	JIFFIE
Mean	20 = 56.37 A	Mean 12 = 48.29 BCDEF	CALYPSO II
Mean	21 = 46.56 CDEFGH	Mean 4 = 48.25 BCDEF	TPR 96C
Mean	22 = 51.18 ABCDE	Mean 36 = 48.13 BCDEFG	DELAWARE DWARF
Mean	23 = 42.94 FGH	Mean 7 = 48.00 BCDEFG	
Mean	24 = 45.73 DEFGH	Mean 10 = 47.72 BCDEFGH	
Mean	25 = 54.03 ABC	Mean 38 = 47.71 BCDEFGH	TARGET
Mean	26 = 48.48 ABCDEF	Mean 33 = 46.82 CDEFGH	MANHATTAN II
Mean	27 = 39.94 H	Mean 21 = 46.56 CDEFGH	PANTHER
Mean	28 = 45.22 DEFGH	Mean 24 = 45.73 DEFGH	HEADSTART
Mean	29 = 50.33 ABCDEF	Mean 11 = 45.47 DEFGH	PR 97 EL2
Mean	30 = 51.14 ABCDE	Mean 28 = 45.22 DEFGH	BRIGHTSTAR
Mean	31 = 55.57 AB	Mean 3 = 45.10 DEFGH	CITATION II
Mean	32 = 48.86 ABCDEF	Mean 5 = 44.71 EFGH	
Mean	33 = 46.82 CDEFGH	Mean 17 = 44.67 EFGH	
Mean	34 = 50.50 ABCDEF	Mean 15 = 44.20 EFGH	
Mean	35 = 48.99 ABCDEF	Mean 14 = 44.16 EFGH	
Mean	36 = 48.13 BCDEFG	Mean 23 = 42.94 FGH	FALKER II
Mean	37 = 49.73 ABCDEF	Mean 2 = 40.23 GH	ADVANTAGE
Mean	38 = 47.71 BCDEFGH	Mean 27 = 39.94 H	

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Table 13B. Spike length (cm) in 1999 in perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRpvP
 Title: 1998 Planted - PR PVP Trial - 1999 Year Data
 Case Range: 115 - 152 Variable 4: Spike Length (CM)
 Error Mean Square = 3.278 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 2.946 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 17.81 ABCD		Mean 8 = 18.92 A		DERRBY SUPREME
Mean	2 = 15.10 DEFGHIJK		Mean 31 = 18.76 AB		SATURN
Mean	3 = 15.29 DEFGHIJK		Mean 20 = 18.41 ABC		MANHATTAN
Mean	4 = 16.91 ABCDEFG		Mean 1 = 17.81 ABCD		ACHIEVER
Mean	5 = 15.47 CDEFGHIJK		Mean 25 = 17.47 ABCDE		PENNPIKE
Mean	6 = 16.77 ABCDEFGH		Mean 19 = 17.41 ABCDE		MAGIC
Mean	7 = 16.94 ABCDEFG		Mean 22 = 17.29 ABCDEF		MORNING STAR
Mean	8 = 18.92 A		Mean 9 = 17.20 ABCDEF		ELF
Mean	9 = 17.20 ABCDEF		Mean 18 = 17.04 ABCDEFG		LYNI
Mean	10 = 15.44 DEFGHIJK		Mean 7 = 16.94 ABCDEFG		DELAWARE DWARF
Mean	11 = 15.30 DEFGHIJK		Mean 4 = 16.91 ABCDEFG		CALYPSO II
Mean	12 = 15.86 BCDEFGHIJ		Mean 6 = 16.77 ABCDEFGH		CUTTER
Mean	13 = 16.65 ABCDEFGHI		Mean 33 = 16.75 ABCDEFGH		TARGET
K	14 = 13.66 JK		Mean 16 = 16.65 ABCDEFGHI		LINN
Mean	15 = 14.44 FGHIJK		Mean 13 = 16.65 ABCDEFGHI		Pinnacle
Mean	16 = 16.65 ABCDEFGHI		Mean 26 = 16.63 ABCDEFGHI		RACER
Mean	17 = 15.40 DEFGHIJK		Mean 30 = 16.20 ABCDEFGHIJ		PR 97DII = Dandy II
Mean	18 = 17.04 ABCDEFG		Mean 29 = 16.02 ABCDEFGHIJ		JIFFIE
Mean	19 = 17.41 ABCDE		Mean 12 = 15.86 BCDEFGHIJ		CITATION II
Mean	20 = 18.41 ABC		Mean 5 = 15.47 CDEFGHIJK		
Mean	21 = 15.26 DEFGHIJK		Mean 10 = 15.44 DEFGHIJK		
Mean	22 = 17.29 ABCDEF		Mean 17 = 15.40 DEFGHIJK		
Mean	23 = 13.89 HIJK		Mean 11 = 15.30 DEFGHIJK		HEADSTART
Mean	24 = 14.61 EFGHIJK		Mean 3 = 15.29 DEFGHIJK		BRIGHTSTAR
Mean	25 = 17.47 ABCDE		Mean 32 = 15.28 DEFGHIJK		SUNSHINE
Mean	26 = 16.63 ABCDEFGHI		Mean 21 = 15.26 DEFGHIJK		MANHATTAN II
Mean	27 = 12.89 K		Mean 2 = 15.10 DEFGHIJK		ADVANTAGE
Mean	28 = 15.09 DEFGHIJK		Mean 28 = 15.09 DEFGHIJK		PR 97EL2
Mean	29 = 16.02 ABCDEFGHIJ		Mean 37 = 14.71 EFGHIJK		TPR 96P
Mean	30 = 16.20 ABCDEFGHIJ		Mean 24 = 14.61 EFGHIJK		PANTHER
Mean	31 = 18.76 AB		Mean 15 = 14.44 FGHIJK		TPR 96A
Mean	32 = 15.28 DEFGHIJK		Mean 34 = 14.20 GHIJK		
Mean	33 = 16.75 ABCDEFGH		Mean 38 = 14.19 GHIJK		
Mean	34 = 14.20 GHIJK		Mean 23 = 13.89 HIJK		PALMER II
Mean	35 = 13.61 JK		Mean 36 = 13.73 IJK		TPR 96C
Mean	36 = 13.73 IJK		Mean 14 = 13.66 JK		
Mean	37 = 14.71 EFGHIJK		Mean 35 = 13.61 JK		TPR 96B
Mean	38 = 14.19 GHIJK		Mean 27 = 12.89 X		

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Table 14B. Flag leaf sheath length (cm) in 1999 of perennial ryegr. Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 to spaced plant plots in fall 1998 near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP
 Title: 1998 Planted - PR PVP Trial - 1999 Year Data
 Case Range: 238-275 Variable 23; Sheath length of Flag Leaf (CM)
 Error mean Square = 1.096 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 1.703 at alpha = 0.050

	Original Order		Ranked Order		LINE
mean	1 = 10.49 ABCDEF	Mean	13 = 11.53 A		LINN
mean	2 = 9.020 FGHI	Mean	8 = 11.42 AB		DERBY SUPREME
mean	3 = 9.223 EFGHI	Mean	25 = 11.08 ABC		PENNFINE
mean	4 = 10.29 ABCDEFG	Mean	31 = 11.02 ABCD		SATURN
mean	5 = 9.543 CDEFGHI	Mean	33 = 10.96 ABCD		TARGET
mean	6 = 10.61 ABCDEF	Mean	22 = 10.74 ABCDE		MORNING STAR
mean	7 = 10.13 ABCDEFGH	Mean	6 = 10.61 ABCDEF		CUTTER
mean	8 = 11.42 AB	Mean	18 = 10.57 ABCDEF		LYNX
mean	9 = 10.11 ABCDEFGH	Mean	1 = 10.49 ABCDEF		ACHIEVER
mean	10 = 9.413 CDEFGHI	Mean	30 = 10.46 ABCDEF		RACER
mean	11 = 9.587 CDEFGHI	Mean	34 = 10.45 ABCDEF		TPR 96A
mean	12 = 10.18 ABCDEFG	Mean	19 = 10.44 ABCDEF		MAGIC
mean	13 = 11.53 A	Mean	4 = 10.29 ABCDEFG		CALYPSO II
mean	14 = 8.427 HI	Mean	26 = 10.23 ABCDEFG		PINNACLE
mean	15 = 8.617 GHI	Mean	20 = 10.21 ABCDEFG		MANHATTAN
mean	16 = 9.930 ABCDEFGHI	Mean	12 = 10.18 ABCDEFG		JIFFIE
mean	17 = 9.147 EFGHI	Mean	7 = 10.13 ABCDEFGH		DELAWARE DWARF
mean	18 = 10.57 ABCDEF	Mean	9 = 10.11 ABCDEFGH		ELF
mean	19 = 10.44 ABCDEF	Mean	16 = 9.930 ABCDEFGHI		
mean	20 = 10.21 ABCDEFG	Mean	29 = 9.850 ABCDEFGHI		PE 97 DII = Dandy II
mean	21 = 8.970 FGHI	Mean	35 = 9.807 BCDEFGHI		TPR 96B
mean	22 = 10.74 ABCDE	Mean	38 = 9.633 CDEFGHI		
mean	23 = 8.453 HI	Mean	11 = 9.587 CDEFGHI		HEADSTART
mean	24 = 9.343 DEFGHI	Mean	36 = 9.570 CDEFGHI		TPR 96C
mean	25 = 11.08 ABC	Mean	5 = 9.543 CDEFGHI		CITATION II
mean	26 = 10.23 ABCDEFG	Mean	37 = 9.495 CDEFGHI		TPR 96P
mean	27 = 8.234 I	Mean	32 = 9.443 CDEFGHI		SUNSHINE
mean	28 = 8.677 GHI	Mean	10 = 9.413 CDEFGHI		
mean	29 = 9.850 ABCDEFGHI	Mean	24 = 9.343 DEFGHI		PANTHER
mean	30 = 10.46 ABCDEF	Mean	3 = 9.223 EFGHI		BRIGHTSTAR
mean	31 = 11.02 ABCD	Mean	17 = 9.147 EFGHI		
mean	32 = 9.443 CDEFGHI	Mean	2 = 9.020 FGHI		ADVANTAGE
mean	33 = 10.96 ABCD	Mean	21 = 8.970 FGHI		MANHATTAN II
mean	34 = 10.45 ABCDEF	Mean	28 = 8.677 GHI		PR 97 EL2
mean	35 = 9.807 BCDEFGHI	Mean	15 = 8.617 GHI		
mean	36 = 9.570 CDEFGHI	Mean	23 = 8.453 HI		PALMER II
mean	37 = 9.495 CDEFGHI	Mean	14 = 8.427 HI		
mean	38 = 9.633 CDEFGHI	Mean	27 = 8.234 I		

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Table 15B. Spike color at heading in 1999 in perennial ryegr. Dandy II
 (Code PR97DII) compared with other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP

Title: 1998 Planted - PR PVP Trial - 1999 Year Data

Case Range: 115-152 Variable 13: Spike color at Heading 1=GREEN 2=PURPLE

Error mean Square = 0.02800 Error Degrees of Freedom = 74

No. of observations to calculate a mean = 3

Least Significant Difference Test

LSD value = 0.2722 at alpha= 0.050

		Original Order	Ranked Order	LINE	PERCENT Purple/Green
Mean	1 =	1.307 BCDE	Mean 27 = 1.580 A	DELaware DWARF	
Mean	2 =	1.230 BCDE	Mean 7 = 1.487 AB	LINE	
Mean	3 =	1.270 BCDE	Mean 13 = 1.487 AB	HEADSTART	
Mean	4 =	1.410 ABCDE	Mean 11 = 1.467 ABC	PR 97ELZ =	53 47
Mean	5 =	1.380 ABCDE	Mean 28 = 1.440 ABCD	TARGET	60 40
Mean	6 =	1.313 ABCDE	Mean 33 = 1.410 ABCDE	CALYPSO II	
Mean	7 =	1.487 AB	Mean 4 = 1.410 ABCDE	PENNYPIKE	59 41
Mean	8 =	1.320 ABCDE	Mean 25 = 1.410 ABCDE		
Mean	9 =	1.307 BCDE	Mean 38 = 1.400 ABCDE	MANHATTAN II	
Mean	10 =	1.367 ABCDE	Mean 21 = 1.393 ABCDE		
Mean	11 =	1.467 ABC	Mean 16 = 1.383 ABCDE	CITATION II	
Mean	12 =	1.210 CDE	Mean 5 = 1.380 ABCDE		
Mean	13 =	1.487 AB	Mean 17 = 1.373 ABCDE	MORNING STAR	
Mean	14 =	1.273 BCDE	Mean 10 = 1.367 ABCDE		
Mean	15 =	1.360 ABCDE	Mean 22 = 1.363 ABCDE	PANTHER	
Mean	16 =	1.383 ABCDE	Mean 15 = 1.360 ABCDE	MANHATTAN	65 35
Mean	17 =	1.373 ABCDE	Mean 24 = 1.353 ABCDE	SATURN	
Mean	18 =	1.237 BCDE	Mean 20 = 1.353 ABCDE	SUNSHINE	
Mean	19 =	1.330 ABCDE	Mean 31 = 1.347 ABCDE	MAGIC	68 32
Mean	20 =	1.353 ABCDE	Mean 32 = 1.343 ABCDE	DERBY SUPREME	
Mean	21 =	1.393 ABCDE	Mean 19 = 1.330 ABCDE	CUTTER	
Mean	22 =	1.363 ABCDE	Mean 8 = 1.320 ABCDE	ELF	69 31
Mean	23 =	1.293 BCDE	Mean 6 = 1.313 ABCDE	ACHIEVER	
Mean	24 =	1.353 ABCDE	Mean 9 = 1.307 BCDE	PR 97DII	70 30
Mean	25 =	1.410 ABCDE	Mean 1 = 1.307 BCDE	Dandy II	71 29
Mean	26 =	1.287 BCDE	Mean 29 = 1.297 BCDE	TPR 96P	
Mean	27 =	1.580 A	Mean 37 = 1.293 BCDE	PALMER II	
Mean	28 =	1.440 ABCD	Mean 23 = 1.293 BCDE	PINNACLE	
Mean	29 =	1.297 BCDE	Mean 26 = 1.287 BCDE		
Mean	30 =	1.230 BCDE	Mean 14 = 1.273 BCDE	BRIGHTSTAR	
Mean	31 =	1.347 ABCDE	Mean 3 = 1.270 BCDE	TPR 96C	75 25
Mean	32 =	1.343 ABCDE	Mean 36 = 1.243 BCDE	LYNX	
Mean	33 =	1.410 ABCDE	Mean 18 = 1.237 BCDE	ADVANTAGE	
Mean	34 =	1.163 E	Mean 2 = 1.230 BCDE	RACER	
Mean	35 =	1.177 DE	Mean 30 = 1.230 BCDE	JIFFIE	
Mean	36 =	1.243 BCDE	Mean 12 = 1.210 CDE	TPR 96B	
Mean	37 =	1.293 BCDE	Mean 35 = 1.177 DE	TPR 96A	84 16
Mean	38 =	1.400 ABCDE	Mean 34 = 1.163 E		

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Table 16B. Seed width (MM) in 1999 of perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 in 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99RPPVP
 Title: 1998 Planted - PR PVP Trial - 1999 Year data
 Case Range: 115-152 Variable 16: 10 Seed Width (MM)
 Error Mean Square = 0.5450 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 1.201 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 12.67	BCD	Mean	25 = 14.00	A
Mean	2 = 12.50	CDE	Mean	13 = 14.00	A
Mean	3 = 12.17	CDE	Mean	4 = 13.83	AB
Mean	4 = 13.83	AB	Mean	16 = 13.00	ABC
Mean	5 = 12.67	BCD	Mean	8 = 12.83	ABCD
Mean	6 = 12.00	CDE	Mean	1 = 12.67	BCD
Mean	7 = 12.33	CDE	Mean	5 = 12.67	BCD
Mean	8 = 12.83	AECB	Mean	21 = 12.67	BCD
Mean	9 = 12.67	BCD	Mean	9 = 12.67	BCD
Mean	10 = 11.33	E	Mean	23 = 12.67	BCD
Mean	11 = 12.00	CDE	Mean	12 = 12.50	CDE
Mean	12 = 12.50	CDE	Mean	2 = 12.50	CDE
Mean	13 = 14.00	A	Mean	30 = 12.50	CDE
Mean	14 = 11.67	DE	Mean	32 = 12.50	CDE
Mean	15 = 11.83	CDE	Mean	38 = 12.33	CDE
Mean	16 = 13.00	ABC	Mean	7 = 12.33	CDE
Mean	17 = 12.00	CDE	Mean	18 = 12.33	CDE
Mean	18 = 12.33	CDE	Mean	3 = 12.17	CDE
Mean	19 = 12.17	CDE	Mean	29 = 12.17	CDE
Mean	20 = 12.17	CDK	Mean	20 = 12.17	CDE
Mean	21 = 12.67	BCD	Mean	19 = 12.17	CDE
Mean	22 = 11.67	DE	Mean	31 = 12.00	CDE
Mean	23 = 12.67	BCD	Mean	36 = 12.00	CDE
Mean	24 = 11.67	DE	Mean	37 = 12.00	CDE
Mean	25 = 14.00	A	Mean	17 = 12.00	CDE
Mean	26 = 11.83	CDE	Mean	11 = 12.00	CDE
Mean	27 = 11.83	CDE	Mean	6 = 12.00	CDE
Mean	28 = 11.67	DK	Mean	33 = 11.83	CDE
Mean	29 = 12.17	CDE	Mean	15 = 11.83	CDE
Mean	30 = 12.50	CDE	Mean	26 = 11.83	CDE
Mean	31 = 12.00	CDE	Mean	35 = 11.83	CDE
Mean	32 = 12.50	CDE	Mean	27 = 11.83	CDE
Mean	33 = 11.83	CDE	Mean	34 = 11.83	CDE
Mean	34 = 11.83	CDE	Mean	14 = 11.67	DE
Mean	35 = 11.83	CDE	Mean	22 = 11.67	DE
Mean	36 = 12.00	CDE	Mean	24 = 11.67	DE
Mean	37 = 12.00	CDE	Mean	28 = 11.67	DE
Y	38 = 12.33	CDE	Mean	10 = 11.33	E

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Table 17B. Seed length (MM) in 1999 of perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 in 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, INC. Research Facility, Data File 99PRPVP
 Case Range: 115-152 Variable 15: Seed Length (MM)
 Error Mean Square = 0.1730 Error Degrees of Freedom = 74
 No of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 0.6767 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 5.250	BCDEFGHIJK	Mean 13 = 6.400	A	LINN
Mean	2 = 5.067	CDEFGHIJK	Mean 30 = 5.783	AB	RACER
Mean	3 = 5.217	BCDEFGHIJK	Mean 4 = 5.750	AB	CALYPSO II
Mean	4 = 5.750	AB	Mean 35 = 5.650	BC	TPR 96B
Mean	5 = 5.567	BCDE	Mean 25 = 5.617	BCD	PENNFINE
Mean	6 = 5.150	BCDEFGHIJK	Mean 5 = 5.567	BCDE	CITATION II
Mean	7 = 5.367	BCDEFGHIJ	Mean 18 = 5.517	BCDEF	LYNX
Mean	8 = 5.483	BCDEFGH	Mean 11 = 5.500	BCDEFG	HEADSTART
Mean	9 = 5.233	BCDEFGHIJK	Mean 8 = 5.483	BCDRPGH	DERBY SUPREME
Mean	10 = 4.833	GHIJK	Mean 22 = 5.400	BCDEFGHI	MORNING STAR
Mean	11 = 5.500	BCDEFG	Mean 12 = 5.383	BCDEFGHI	JIFFIE
Mean	12 = 5.383	BCDEFGHI	Mean 7 = 5.367	BCDEFGHIJ	DELAWARE DWARF
Mean	13 = 6.400	A	Mean 20 = 5.367	BCDEFGHIJ	MANHATTAN
Mean	14 = 4.983	CDEFGHIJK	Mean 32 = 5.317	BCDEFGHIJK	SUNSHINE
Mean	15 = 4.700	JK	Mean 21 = 5.267	BCDEFGHIJK	MANHATTAN II
Mean	16 = 4.800	IJK	Mean 34 = 5.267	BCDEFGHIJK	TPR 96A
Mean	17 = 4.967	DEFGHIJK	Mean 1 = 5.250	BCDEFGHIJK	ACHIEVER
Mean	18 = 5.517	BCDEF	Mean 9 = 5.233	BCDEFGHIJK	ELF
Mean	19 = 4.950	DEFGHIJK	Mean 37 = 5.217	BCDEFGHIJK	TPR 96P
Mean	20 = 5.367	BCDEFGHIJ	Mean 3 = 5.217	BCDEFGHIJK	BRIGHTSTAR
Mean	21 = 5.267	BCDEFGHIJK	Mean 24 = 5.167	BCDEFGHIJK	PANTHER
Mean	22 = 5.400	BCDEFGHI	Mean 6 = 5.150	BCDEFGHIJK	CUTTER
Mean	23 = 4.867	FGHJK	Mean 38 = 5.117	BCDEFGHIJK	ADVANTAGE
Mean	24 = 5.167	BCDEFGHIJK	Mean 2 = 5.067	BCDEFGHIJK	PR 97DII = Dandy II
Mean	25 = 5.617	BCD	Mean 29 = 5.050	BCDEFGHIJK	SATURN
Mean	26 = 4.833	GHIJK	Mean 27 = 5.050	BCDEFGHIJK	MAGIC
Mean	27 = 5.050	CDEFGHIJK	Mean 31 = 5.017	BCDEFGHIJK	TPR 96C
Mean	28 = 4.817	IJK	Mean 14 = 4.983	BCDEFGHIJK	PALMER II
Mean	29 = 5.050	CDEFGHIJK	Mean 17 = 4.967	DEFGHIJK	PINNACLE
Mean	30 = 5.783	AB	Mean 19 = 4.950	DEFGHIJK	PR 97EL2
Mean	31 = 5.017	CDEFGHIJK	Mean 36 = 4.900	EFGHIJK	TARGET
Mean	32 = 5.317	BCDEFGHIJK	Mean 23 = 4.867	FGHIJK	
Mean	33 = 4.683	K	Mean 26 = 4.833	GHIJK	
Mean	34 = 5.267	BCDEFGHIJK	Mean 10 = 4.833	GHIJK	
Mean	35 = 5.650	BC	Mean 28 = 4.817	HJK	
Mean	36 = 4.900	EFGHIJK	Mean 16 = 4.800	IJK	
Mean	37 = 5.217	BCDEFGHIJK	Mean 15 = 4.700	JK	
Mean	38 = 5.117	BCDEFGHIJK	Mean 33 = 4.683	K	

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Table 18B1. % plants + anthocyanin lower leaf sheath per. ryegr. Dandy II
 (Code PR 97 DII) in 1999 compared with other cultivars trans-
 planted in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File COLE1199
 Title: 6 days old coleoptile PR1-99 1st Run Nov. 1, 1999
 Case Range: 133-154 Variable 3: Coleoptile % Red
 Error mean Square = 53.52 Error Degrees of Freedom = 42
 No. of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 12.05 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 8.000	CDEF	Mean	21 = 25.33 A	TARGET
Mean	2 = 0.0000	F	Mean	14 = 24.67 A	
Mean	3 = 4.000	DEF	Mean	17 = 22.33 AB	CALYPSO II
Mean	4 = 11.33	BCDEF	Mean	11 = 16.67 ABC	PANTHER
Mean	5 = 14.00	ABCDE	Mean	16 = 15.00 ABCD	LINN
Mean	6 = 11.00	BCDEF	Mean	5 = 14.00 ABCDE	
Mean	7 = 6.333	CDEF	Mean	4 = 11.33 BCDEF	TPR 96P
Mean	8 = 4.333	DEF	Mean	6 = 11.00 BCDEF	TPR 96B
Mean	9 = 4.333	DEF	Mean	18 = 10.00 CDEF	TPR 96A
Mean	10 = 8.333	CDEF	Mean	13 = 9.667 CDEF	PALMER II
Mean	11 = 16.67	ABC	Mean	20 = 9.000 CDEF	
Mean	12 = 6.333	CDEF	Mean	10 = 8.333 CDEF	HEADSTART
Mean	13 = 9.667	CDEF	Mean	1 = 8.000 CDEF	PR 97 DII = Dandy II
Mean	14 = 24.67	A	Mean	7 = 6.333 CDEF	
Mean	15 = 2.667	E	Mean	12 = 6.333 CDEF	PENNPINE
Mean	16 = 15.00	ABCD	Mean	22 = 6.000 CDEF	REPELL II
Mean	17 = 22.33	AB	Mean	19 = 6.000 CDEF	MAGIC
Mean	18 = 10.00	CDEF	Mean	8 = 4.333 DEF	PR 97 EL2
Mean	19 = 6.000	CDEF	Mean	9 = 4.333 DEF	
Mean	20 = 9.000	CDEF	Mean	3 = 4.000 DEF	TPR 96C
Mean	21 = 25.33	A	Mean	15 = 2.667 E	LINX
Mean	22 = 6.000	CDEF	Mean	2 = 0.0000 F	

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Table 18B2. % plants + anthocyanin lower leaf sheath per. ryegr. Dandy II
 (Code PR 97 DII) in 1999 compared with other cultivars trans-
 planted in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File COLEL1199
 Title: 6 days old coleoptile PR 1-99 2nd Run Nov. 12, 1999
 Case Range: 158-179 Variable 5: Coleoptile % Red
 Error Mean Square = 74.74 Error Degrees of Freedom = 42
 Number of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 14.24 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 13.67	CDEFG	Mean	14 = 36.00	A
Mean	2 = 1.667	G	Mean	16 = 33.33	AB
Mean	3 = 24.00	ABC	Mean	21 = 26.67	ABC
Mean	4 = 19.33	BCDE	Mean	15 = 26.00	ABC
Mean	5 = 15.67	CDEFG	Mean	3 = 24.00	ABC
Mean	6 = 18.67	CDEF	Mean	8 = 24.00	ABC
Mean	7 = 9.667	DEFG	Mean	18 = 23.00	ABCD
Mean	8 = 24.00	ABC	Mean	17 = 20.00	BCDE
Mean	9 = 7.667	EFG	Mean	4 = 19.33	BCDE
Mean	10 = 17.33	CDEF	Mean	6 = 18.67	CDEF
Mean	11 = 17.00	CDEF	Mean	20 = 18.33	CDEF
Mean	12 = 16.67	CDEF	Mean	10 = 17.33	CDEF
N.	13 = 4.667	FG	Mean	19 = 17.33	CDEF
Mean	14 = 36.00	A	Mean	11 = 17.00	CDEF
Mean	15 = 26.00	ABC	Mean	12 = 16.67	CDEF
Mean	16 = 33.33	AB	Mean	22 = 16.00	CDEF
Mean	17 = 20.00	BCDE	Mean	5 = 15.67	CDEFG
Mean	18 = 23.00	ABCD	Mean	1 = 13.67	CDEFG
Mean	19 = 17.33	CDEF	Mean	7 = 9.667	DEFG
Mean	20 = 18.33	CDEF	Mean	9 = 7.667	EFG
Mean	21 = 26.67	ABC	Mean	13 = 4.667	FG
Mean	22 = 16.00	CDEF	Mean	2 = 1.667	G

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Table 19B. 1999 weight 1000 seed of perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared with other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data file 99PRPVP
 Case Range: 115 - 152 Variable 17: True 1000 Seed Weight (G)
 Error Mean Square = 0.02200 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3
 LSD value = 0.2413 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 2.237	BCD	Mean 13 = 2.890	A	LINN
Mean	2 = 2.123	CDEF	Mean 25 = 2.380	B	PENNPIKE
Mean	3 = 1.967	EFGHIJK	Mean 4 = 2.350	BC	CALYPSO II
Mean	4 = 2.350	BC	Mean 1 = 2.237	BCD	ACHIEVER
Mean	5 = 2.203	BCDE	Mean 5 = 2.203	BCDE	CITATION II
Mean	6 = 2.127	CDEF	Mean 7 = 2.133	CDEF	DELaware DWARF
Mean	7 = 2.133	CDEF	Mean 6 = 2.127	CDEF	CUTTER
Mean	8 = 2.027	D EFGHIJ	Mean 2 = 2.123	CDEF	ADVANTAGE
Mean	9 = 1.897	F GHIJKL	Mean 30 = 2.097	D EFG	RACER
Mean	10 = 1.743	KL	Mean 34 = 2.093	D EFGH	TPR 96A
Mean	11 = 1.970	EFGHIJK	Mean 21 = 2.083	D EFGH	MANHATTAN II
Mean	12 = 1.903	F GHIJKL	Mean 38 = 2.073	D EFGHI	LYNX
Mean	13 = 2.890	A	Mean 18 = 2.070	D EFGHI	DERBY SUPREME
Mean	14 = 1.860	GHIJKL	Mean 8 = 2.027	D EFGHIJ	MORNING STAR
Mean	15 = 1.910	F GHIJKL	Mean 22 = 2.017	D EFGHIJ	TPR 96E
Mean	16 = 2.013	D EFGHIJ	Mean 16 = 2.013	D EFGHIJ	HEADSTART
Mean	17 = 1.697	L	Mean 35 = 2.000	D EFGHIJ	BRIGHTSTAR
Mean	18 = 2.070	D EFGHI	Mean 11 = 1.970	EFGHIJK	TPR 96P
Mean	19 = 1.943	F GHIJK	Mean 3 = 1.967	EFGHIJK	PR 97DII = Dandy II
Mean	20 = 1.733	KL	Mean 37 = 1.963	EFGHIJK	MAGIC
Mean	21 = 2.083	D EFGH	Mean 29 = 1.950	F GHIJK	TPR 96C
Mean	22 = 2.017	D EFGHIJ	Mean 19 = 1.943	F GHIJK	SUNSHINE
Mean	23 = 1.837	IJKL	Mean 36 = 1.940	F GHIJK	JIFFIE
Mean	24 = 1.833	IJKL	Mean 27 = 1.927	F GHIJKL	ELF
Mean	25 = 2.380	B	Mean 15 = 1.910	F GHIJKL	SATURN
Mean	26 = 1.853	H IJKL	Mean 32 = 1.907	F GHIJKL	PINNACLE
Mean	27 = 1.927	F GHIJKL	Mean 12 = 1.903	F GHIJKL	PALMER II
Mean	28 = 1.797	JKL	Mean 9 = 1.897	F GHIJKL	PANTHER
Mean	29 = 1.950	F GHIJK	Mean 31 = 1.863	GHIJKL	PR 97EL2
Mean	30 = 2.097	D EFG	Mean 14 = 1.860	GHIJKL	TARGET
Mean	31 = 1.863	GHIJKL	Mean 26 = 1.853	H IJKL	MANHATTAN
Mean	32 = 1.907	F GHIJKL	Mean 23 = 1.837	IJKL	
Mean	33 = 1.747	KL	Mean 24 = 1.833	IJKL	
Mean	34 = 2.093	D EFGH	Mean 28 = 1.797	JKL	
Mean	35 = 2.000	D EFGHIJ	Mean 33 = 1.747	KL	
Mean	36 = 1.940	F GHIJK	Mean 10 = 1.743	KL	
Mean	37 = 1.963	EFGHIJK	Mean 20 = 1.733	KL	
Mean	38 = 2.073	D EFGHI	Mean 17 = 1.697	L	

200100241

Table 20B. Flag leaf posture boot stage of perennial ryegrass Dandy II
 (Code PR (& DII)) in 1999 compared to other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP

Title: 1998 Planted - PR PVP Trial - 1999 Year Data

Case Range: 115-152 Variable 7: flag leaf at boot stage 1=deflected,
 3=recurved, 5=horizontal, 7=semi-erect

Error Mean Square = 0.2290 Error Degrees of Freedom = 74

No. observations to calculate a mean = 3

LSD value = 0.7785 at alpha = 0.050

	Original Order		Ranked Order		LINE
Mean	1 = 5.677 A		Mean 1 = 5.677 A		ACHIEVER
Mean	2 = 5.313 ABCDEFG		Mean 12 = 5.593 AB		JIFFIE
Mean	3 = 4.693 FGHJKLM		Mean 11 = 5.577 ABC		HEADSTART
Mean	4 = 5.170 ABCDEFGHI		Mean 27 = 5.500 ABCD		LYNX
Mean	5 = 5.023 ABCDEFGHIJK		Mean 18 = 5.480 ABCDE		LINN
Mean	6 = 5.250 ABCDEFGH		Mean 13 = 5.370 ABCDEF		ADVANTAGE
Mean	7 = 5.043 ABCDEFGHIJ		Mean 2 = 5.313 ABCDEFG		CUTTER
Mean	8 = 4.990 ABCDEFGHIJK		Mean 6 = 5.250 ABCDEFGH		
Mean	9 = 4.473 HIJKL		Mean 14 = 5.217 ABCDEFGH		
Mean	10 = 4.740 DEFGHIJKL		Mean 26 = 5.183 ABCDEFGHI		PINNACLE
Mean	11 = 5.577 ABC		Mean 4 = 5.170 ABCDEFGHI		CALYPSO II
Mean	12 = 5.593 AB		Mean 24 = 5.167 ABCDEFGHI		PANTHER
Mean	13 = 5.370 ABCDEF		Mean 17 = 5.113 ABCDEFGHIJ		DELAWARE DWARF
Mean	14 = 5.217 ABCDEFGH		Mean 7 = 5.043 ABCDEFGHIJ		CITATION II
Mean	15 = 4.790 DEFGHIJKL		Mean 5 = 5.023 ABCDEFGHIJK		DERBY SUPREME
Mean	16 = 4.807 CDEFGHIJKL		Mean 8 = 4.990 ABCDEFGHIJK		
Mean	17 = 5.113 ABCDEFGHIJ		Mean 38 = 4.973 ABCDEFGHIJK		
Mean	18 = 5.480 ABCDE		Mean 23 = 4.963 ABCDEFGHIJK		PALMER II
Mean	19 = 4.253 XL		Mean 30 = 4.910 ABCDEFGHIJK		RACER
Mean	20 = 4.643 FGHJKLM		Mean 25 = 4.910 ABCDEFGHIJK		PENNPIPE
Mean	21 = 4.767 DEFGHIJKL		Mean 34 = 4.903 ABCDEFGHIJK		TPK 96A
Mean	22 = 4.713 EFGHIJKL		Mean 35 = 4.847 BCDEFGHIJKL		TPK 96B
Mean	23 = 4.963 ABCDEFGHIJK		Mean 31 = 4.823 BCDEFGHIJKL		SATURN
Mean	24 = 5.167 ABCDEFGHI		Mean 16 = 4.807 CDEFGHIJKL		
Mean	25 = 4.910 ABCDEFGHIJK		Mean 15 = 4.790 DEFGHIJKL		
Mean	26 = 5.183 ABCDEFGHI		Mean 21 = 4.767 DEFGHIJKL		MANHATTAN II
Mean	27 = 5.500 ABCD		Mean 10 = 4.740 DEFGHIJKL		
Mean	28 = 4.427 IJKL		Mean 22 = 4.713 EFGHIJKL		MORNING STAR
Mean	29 = 4.557 GHJKL		Mean 3 = 4.693 FGHJKL		BRIGHTSTAR
Mean	30 = 4.910 ABCDEFGHIJK		Mean 20 = 4.643 FGHJKL		MANHATTAN
Mean	31 = 4.823 BCDEFGHIJKL		Mean 37 = 4.583 GHJKL		TPR 96P
Mean	32 = 4.373 JKLN		Mean 29 = 4.557 GHJKL		PR 97DII = Dandy II
Mean	33 = 4.087 L		Mean 36 = 4.517 HJKL		TPR 96C
Mean	34 = 4.903 ABCDEFGHIJK		Mean 9 = 4.473 HJKL		ELF
Mean	35 = 4.847 BCDEFGHIJKL		Mean 28 = 4.427 IJKL		PR 97EL2
Mean	36 = 4.517 HIJKL		Mean 32 = 4.373 JKL		SUNSHINE
Mean	37 = 4.583 GHJKL		Mean 19 = 4.253 KL		MAGIC
Mean	38 = 4.973 ABCDEFGHIJK		Mean 33 = 4.087 L		TARGET

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Table 21B. Anther date during 1999 of perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared to other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP
 Title: 1998 Planted - PR PVP Trial - 1999 Year Data
 Case Range: 115-152 Variable 19: Anther Date (Julian)
 Error Mean Square = 1.738 Error Degrees of Freedom = 74
 No. of observations to calculate a mean = 3
 Least Significant Difference Test
 LSD value = 2.145 at alpha = 0.050

	Original Order	Ranked Order	LINE	
Mean	1 = 162.0 EFG	Mean 20 = 167.7 A	MANHATTAN	June 17
Mean	2 = 164.0 BCDE	Mean 3 = 165.3 B	BRIGHTSTAR	
Mean	3 = 165.3 B	Mean 24 = 165.0 BC	PANTHER	
Mean	4 = 163.0 CDEF	Mean 38 = 164.7 BCD		
Mean	5 = 162.7 DEFG	Mean 17 = 164.7 BCD		
Mean	6 = 164.0 BCDE	Mean 28 = 164.7 BCD	PR 97EL2	
Mean	7 = 163.3 BCDE	Mean 15 = 164.3 BCD		
Mean	8 = 162.7 DEFG	Mean 32 = 164.0 BCDE	SUNSHINE	
Mean	9 = 164.0 BCDE	Mean 6 = 164.0 BCDE	CUTTER	
Mean	10 = 163.3 BCDE	Mean 2 = 164.0 BCDE	ADVANTAGE	
Mean	11 = 163.0 CDEF	Mean 9 = 164.0 BCDE	ELF	
Mean	12 = 164.0 BCDE	Mean 12 = 164.0 BCDE	JIFFIE	
Mean	13 = 161.0 FG	Mean 37 = 164.0 BCDE	TPR 96P	
Mean	14 = 163.0 CDEF	Mean 31 = 163.7 BCDE	SATURN	
Mean	15 = 164.3 BCD	Mean 21 = 163.7 BCDE	MANHATTAN II	
Mean	16 = 163.0 CDEF	Mean 29 = 163.3 BCDE	PR 97DII = Dandy II	
Mean	17 = 164.7 BCD	Mean 7 = 163.3 BCDE	DELAWARE DWARF	
Mean	18 = 162.0 EFG	Mean 22 = 163.3 BCDE	MORNING STAR	
Mean	19 = 163.0 CDEF	Mean 30 = 163.3 BCDE	RACER	
Mean	20 = 167.7 A	Mean 10 = 163.3 BCDE	TPR 96C	
Mean	21 = 163.7 BCDE	Mean 36 = 163.3 BCDE	TPR 96B	June 12
Mean	22 = 163.3 BCDE	Mean 14 = 163.0 CDEF		
Mean	23 = 162.7 DEFG	Mean 35 = 163.0 CDEF		
Mean	24 = 165.0 BC	Mean 16 = 163.0 CDEF		
Mean	25 = 160.7 G	Mean 19 = 163.0 CDEF	MAGIC	
Mean	26 = 162.0 EFG	Mean 11 = 163.0 CDEF	HEADSTART	
Mean	27 = 162.7 DEFG	Mean 4 = 163.0 CDEF	CALYPSO II	
Mean	28 = 164.7 BCD	Mean 33 = 163.0 CDEF	TARGET	
Mean	29 = 163.3 BCDE	Mean 34 = 162.7 DEFG	TPR 96A	
Mean	30 = 163.3 BCDE	Mean 8 = 162.7 DEFG	DERBY SUPREME	
Mean	31 = 163.7 BCDE	Mean 23 = 162.7 DEFG	PALMER II	
Mean	32 = 164.0 BCDE	Mean 27 = 162.7 DEFG		
Mean	33 = 163.0 CDEF	Mean 5 = 162.7 DEFG	CITATION II	
Mean	34 = 162.7 DEFG	Mean 1 = 162.0 EFG	ACHIEVER	
Mean	35 = 163.0 CDEF	Mean 26 = 162.0 EFG	PINNACLE	
Mean	36 = 163.3 BCDE	Mean 18 = 162.0 EFG	LYNX	
Mean	37 = 164.0 BCDE	Mean 13 = 161.0 FG	LINN	
Mean	38 = 164.7 BCD	Mean 25 = 160.7 G	PENNFINE	June 10

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Table 22B. Anther color percent in 1999 of perennial ryegrass cv Dandy II
 (Code PR 97 DII) compared to other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP
 Title: 1998 Planted - PR PVP Trial - 1999 Year Data
 Randomized complet block design, 3 replications

1999 PR PVP
 Anther color %

Line	White	Purple	Yellow
Achiever	34	7	59
Advantage	37	3	60
Brightstar	28	11	61
Calypso II	40	4	56
Citation II	31	16	53
Cutter	26	12	62
Delaware Dwarf	28	14	58
Derby Supreme	27	18	55
Elf	26	19	55
	42	7	51
Headstart	22	12	66
Jiffie	22	7	71
Linn	7	72	21
	30	2	68
	34	7	59
	32	2	66
	22	10	68
Lynx	20	30	50
Magic	25	13	62
Manhattan	45	0	55
Manhattan II	37	16	47
Morning Star	13	12	75
Palmer II	32	2	66
Panther	32	2	66
Pennfine	6	36	58
Pinnacle	13	17	70
	21	3	76
PR 97HL2	30	4	66
PR 97DII = Dandy II	27	10	63
Racer	25	9	66
Saturn	19	9	72
Sunshine	35	5	60
Target	16	13	71
TPR 96A	20	20	60
TPR 96B	24	21	55
TPR 96C	17	10	73
TPR 96P	23	25	52
	42	6	52

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Table 23B. Growth habit at boot stage in 1999 of perennial ryegr. Dandy II
 (Code PR 97 DII) compared to other cultivars transplanted
 in fall 1998 to spaced plant plots near Corvallis, Oregon

Ref. Pickseed West, Inc. Research Facility, Data File 99PRPVP

Title: 1998 Planted - PR PVP Trial - 1999 Year Data

Case Range: 115-152 Variable 14: Growth habit at boot stage 1=Prostrate
 2=semi-erect, 3=erect

Error Mean Square = 0.02300 Error Degrees of Freedom = 74

No. of observations to calculate a mean = 3

LSD value = 0.2467 at alpha = 0.050

		Original Order		Ranked Order		LINE
ean	1 =	2.193 ABC	Mean	30 =	2.223 A	RACER
ean	2 =	2.150 ABCD	Mean	13 =	2.213 AB	LINN
ean	3 =	1.837 FGH	Mean	1 =	2.193 ABC	ACHIEVER
ean	4 =	2.003 ABCDEF	Mean	6 =	2.193 ABC	CUTTER
ean	5 =	2.063 ABCDEF	Mean	2 =	2.150 ABCD	ADVANTAGE
ean	6 =	2.193 ABC	Mean	27 =	2.133 ABCD	
ean	7 =	1.973 BCDFG	Mean	31 =	2.130 ABCD	SATURN
ean	8 =	2.033 ABCDEF	Mean	12 =	2.130 ABCD	JIFFIE
ean	9 =	2.010 ABCDEF	Mean	26 =	2.120 ABCDE	Pinnacle
ean	10 =	2.010 ABCDEF	Mean	24 =	2.090 ABCDE	PANTHER
ean	11 =	1.953 CDEFG	Mean	35 =	2.073 ABCDEF	TPR 96B
ean	12 =	2.130 ABCD	Mean	32 =	2.070 ABCDEF	SUNSHINE
ean	13 =	2.213 AB	Mean	18 =	2.070 ABCDEF	LYNX
ean	14 =	2.057 ABCDEF	Mean	36 =	2.067 ABCDEF	TPR 96C
ean	15 =	2.050 ABCDEF	Mean	5 =	2.063 ABCDEF	CITATION II
ean	16 =	1.877 EFGH	Mean	34 =	2.057 ABCDEF	TPR 96A
ean	17 =	1.937 DEFGH	Mean	14 =	2.057 ABCDEF	
ean	18 =	2.070 ABCDEF	Mean	15 =	2.050 ABCDEF	
ean	19 =	1.910 DEFGH	Mean	29 =	2.043 ABCDEF	PR 97DII = Dandy II
ean	20 =	1.737 GH	Mean	38 =	2.037 ABCDEF	
ean	21 =	1.927 DEFGH	Mean	8 =	2.033 ABCDEF	DERBY SUPREME
ean	22 =	1.933 DEFGH	Mean	37 =	2.013 ABCDEF	TPR 96P
ean	23 =	1.920 DEFGH	Mean	10 =	2.010 ABCDEF	KLP
ean	24 =	2.090 ABCDE	Mean	9 =	2.010 ABCDEF	CALYPSO II
ean	25 =	1.947 CDEFG	Mean	4 =	2.003 ABCDEF	DELaware DWARF
ean	26 =	2.120 ABCDE	Mean	7 =	1.973 BCDFG	HEADSTART
ean	27 =	2.133 ABCD	Mean	11 =	1.953 CDEFG	PENNPIPE
ean	28 =	1.877 EFGH	Mean	25 =	1.947 CDEFG	
ean	29 =	2.043 ABCDEF	Mean	17 =	1.937 DEFGH	
ean	30 =	2.223 A	Mean	22 =	1.933 DEFGH	MORNING STAR
ean	31 =	2.130 ABCD	Mean	21 =	1.927 DEFGH	MANHATTAN II
ean	32 =	2.070 ABCDEF	Mean	23 =	1.920 DEFGH	PALMER II
ean	33 =	1.690 H	Mean	19 =	1.910 DEFGH	MAGIC
ean	34 =	2.057 ABCDEF	Mean	16 =	1.877 EFGH	PR 97BL2
ean	35 =	2.073 ABCDEF	Mean	28 =	1.877 EFGH	BRIGHTSTAR
ean	36 =	2.067 ABCDEF	Mean	3 =	1.837 FGH	MANHATTAN
ean	37 =	2.013 ABCDEF	Mean	20 =	1.737 GH	TARGET
ean	38 =	2.037 ABCDEF	Mean	33 =	1.690 H	

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) Ag Biotech of Oregon, Inc.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER PR97DII	3. VARIETY NAME Dandy II
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 1125 S.W. Stopp Place Corvallis, oregon 97333	5. TELEPHONE (include area code) (541) 753-4144	6. FAX (include area code)
7. PVPO NUMBER d 00100241		
8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
9. Is the applicant (individual or company) a U.S. national or U.S. based company? If no, give name of country <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
10. Is the applicant the original owner? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If no, please answer one of the following: a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)? <input type="checkbox"/> YES <input type="checkbox"/> NO If no, give name of country b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company? <input type="checkbox"/> YES <input type="checkbox"/> NO If no, give name of country		
11. Additional explanation on ownership (if needed, use reverse for extra space):		

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

- If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
- If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
- If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

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